ForesTalk

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ForesTalk

Volume 4 Number 2 Summer 1980

Executive Editor: **Garth Coward**
Editor: **Cameron Young**
Design: **Ken Seabrook**

ForesTalk Resource Magazine is published quarterly by the Province of British Columbia, Ministry of Forests, Information Services Branch, 1450 Government Street, Victoria, B.C. V8W 3E7. Telephone: (604) 387-5985.

Designed to encourage interest, discussion and understanding of British Columbia's forest, range and recreational resources, ForesTalk is available free on request. Second class mailing registration No. 3863. International Standard Serial Number ISSN 0700-1770. ForesTalk welcomes submissions from professional writers and photographers on themes related to the B.C. forests and their uses. Address enquiries to the editor.

Deputy Minister of Forests:
T.M. Apsey
Director, Information Services Branch:
J.R. Cox

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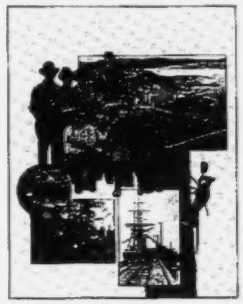
Tom Waterland

Hon. Tom Waterland, *Minister of Forests*

Province of British Columbia — Ministry of Forests



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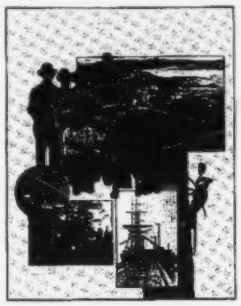

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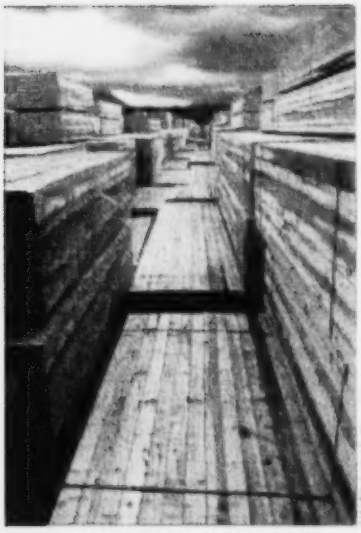
LUMBER MARKETING
HOW THEY PLAY THE GAME

by Ken Bernsohn

Even when you're out of the forests in British Columbia, you're never out of the woods: trainloads of lumber on their way to the U.S. delay city commuter traffic; trucks carrying lumber are such a common sight on our streets and highways they're almost invisible; ships loaded down with lumber cut a path through our coastal waters on their way to Japan, England, Germany and Holland. The three billion dollars' worth of lumber produced in B.C. each year is enough to build a bridge to the moon an inch thick and over ten feet wide. That's a lot of lumber to find markets for.



In 1980 the total number of housing starts in the U.S. will fall by at least 600,000 units below last year's levels. That has already resulted in a very big drop in the B.C. lumber market and has sent companies scrambling to find new export markets, especially in the United Kingdom, France, Holland, Germany and Japan. "Within the range of markets available to us," explains one high-level lumber marketing executive, "the key to getting ahead in the lumber marketing game is how you play your options."

Over 700 sawmills in B.C. compete with mills across the country for the Canadian market. All these mills also compete with mills in the U.S. for the American market. And all the mills in North America compete with sawmills in Scandinavia, Germany, Japan, Australia, and South America for the world market. The lumber marketing game is so huge that no single company or country can control it. Every day the cost of lumber moves up or down, for any number of reasons: if the Japanese change their sleeping habits, prices change; if the number of stone masons in Germany goes up, prices drop.

"It's just like a first-year economics class, with supply and demand determining prices," says Bill Johnson, assistant to the vice-president for wood products marketing at Boise Cascade, a major U.S. forest products company. Big companies such as MacMillan Bloedel, B.C. Forest Products, Northwood and Cantor play the same game as the small sawmills, with each trying to snag their share of the volatile market.

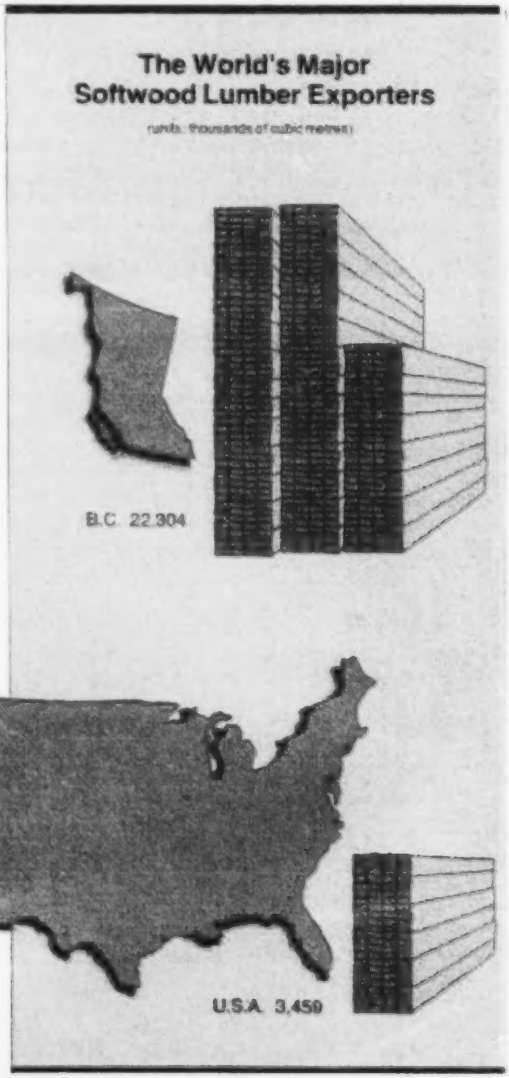
That isn't always easy. The United States imports about two billion dollars worth of B.C. lumber a year, four fifths of our total exports. That's $800 for every man, woman, and child in the province. Some years it's even better, at other times the market goes to the dogs. And 1980 is a bad year, with the number of housing starts in the U.S. falling at least 600,000 units below last year's level; a very big drop in the lumber market. As a result, companies have been scrambling to find new markets, especially in the United Kingdom, France, Holland, Germany and Japan. But some B.C. firms have been forced to shut down, especially mills in the interior which deal almost exclusively in the U.S. And it might be 1981 before the U.S. housing market picks up again.

How the game is played

With the U.S. accounting for 80 per cent of lumber exports from B.C., most marketing strategies are directed at customers south of the border. But the United Kingdom, Japan and northern Europe are also important customers, and a growing interest in B.C. lumber is developing in other world markets, including South American countries and South Korea. A sleeping giant of a customer is the People's Republic of China, which already is showing considerable interest in wood products from B.C.

"Within the range of markets available to us," explains one high-level lumber marketing executive, "the key to getting ahead in the lumber marketing game is how you play your options." By producing lumber geared to only a part of the market, for example, firms can avoid competing with everyone else and have a better chance of making money. That's why some mills choose to cater to home builders, others to the do-it-yourself market.

"We produce longer lumber lengths, up to 24 feet. Some com-



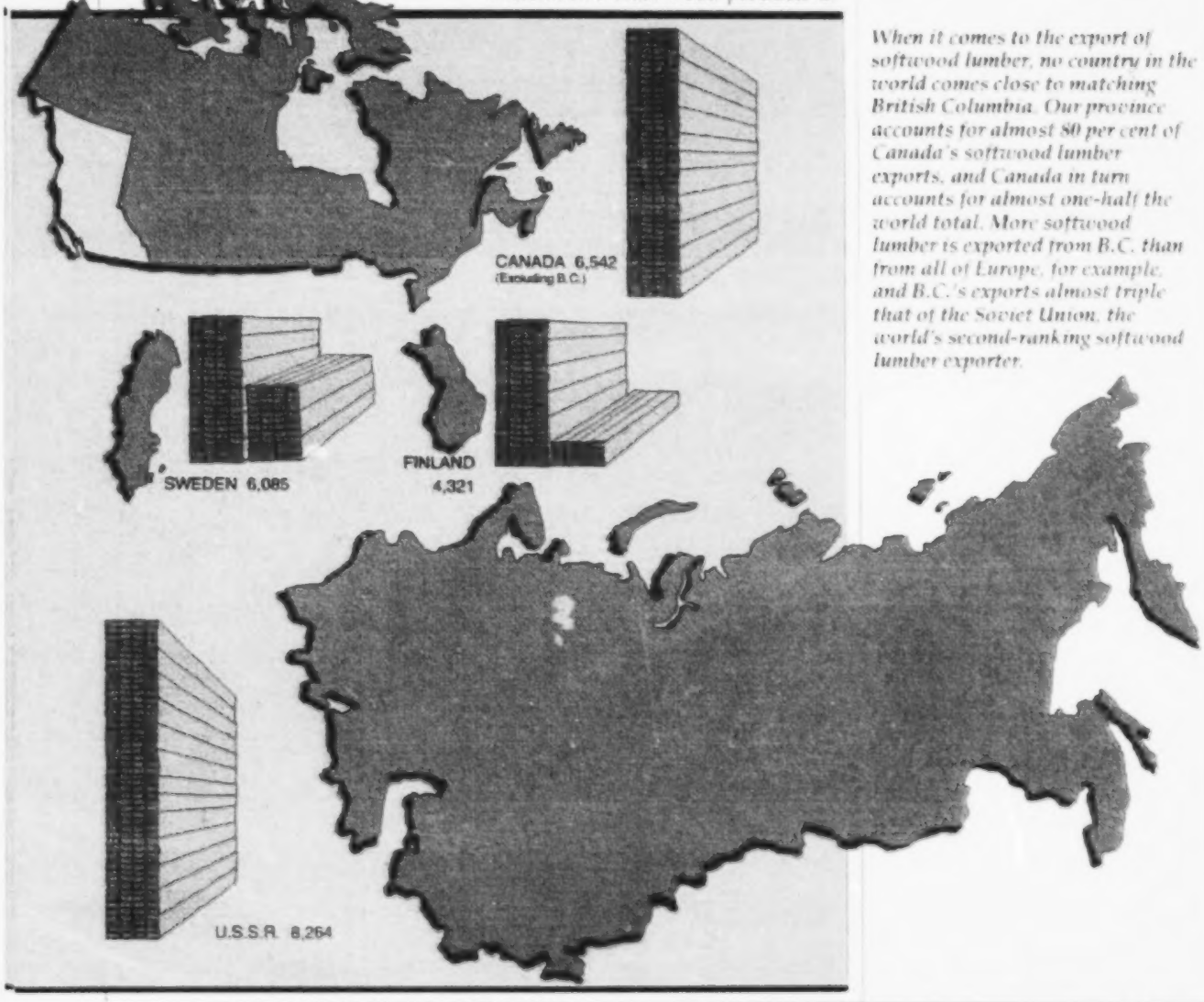
petitors only go to 20 feet," says Don Currie of Balfour Guthrie in Vancouver. "And we make what's wanted by specific markets, like three and four inch lumber suitable for remanufacturing in the United Kingdom and northern Europe."

Jim Rustad, president of Rustad Brothers in Prince George, says, "We customize each order for every one of the hundreds of wholesalers we serve. Every three weeks, for example, we ship a carload with two special lumber sizes to a company in the southern U.S. which makes walk-in coolers."

"Many operations in B.C. are production oriented," says Don Currie. "They think all they have to do is speed up their machinery and their problems will be solved. They might actually make more money by slowing down their equipment and concentrating on meeting the needs of the market place."

But there are only a certain number of selective buyers and only a limited number of specialty mills. Instead, most lumber produced in B.C. is cut to standard dimensions and is bought and sold on the assumption that it's all about the same quality; grading rules see to that. So how does a buyer decide which wood to buy from which company?

"It's like asking, 'why do you buy a particular loaf of bread?' One has a nice wrapping in two colours, another bare loaf just sits on the shelf gathering dust," explains Brud Matheson, manager of lumber sales for Crown Zellerbach's coast wood products di-



When it comes to the export of softwood lumber, no country in the world comes close to matching British Columbia. Our province accounts for almost 80 per cent of Canada's softwood lumber exports, and Canada in turn accounts for almost one-half the world total. More softwood lumber is exported from B.C. than from all of Europe, for example, and B.C.'s exports almost triple that of the Soviet Union, the world's second-ranking softwood lumber exporter.

vision. "People want a good-looking load of wood. Today, lumber sells well when it's wrapped, end-painted, has clear legible grading stamps and is a well-known brand." And while all that doesn't make any difference in terms of the lumber itself, it makes a difference in the way customers think about the company that makes the lumber; if buyers look favourably on that company they keep coming back.

The High Rollers

To get a higher price for their lumber, mills and lumber wholesalers will sometimes take a calculated risk. They'll send train carloads of lumber rolling east without first having found a buyer. If a buyer is found while the cars are en route — a buyer so desperate for quick delivery that he's willing to pay a premium price for these "rollers" — the shipper wins. "If the shipper guesses right," says Van Scoffield, manager of the Council of Forest Industries northern office, "he can get an excellent price for quick delivery, perhaps to Georgia, Nebraska or New Mexico. But if he guesses wrong and no buyer is found the shipper ends up paying for a carload of unsold lumber to sit in a freight marshalling yard."

There are no figures showing just how many B.C. rollers are on the go; like good poker players, the companies don't want to show their hands. But consider this. Minneapolis, Minnesota is a favorite stop-over for rollers, being a central distribution point in relation to final market destinations. And statistics show that more B.C. lumber is shipped to Minnesota than to almost any other state in the U.S. As Van Scoffield points out: "We know Minnesota sure doesn't use that much wood."

But as long as firms make similar products, there's one thing they can't lose sight of. "If your product is 50 cents more expensive than the competition, the vast majority won't buy it," says Boise Cascade's Bill Johnson. "If it's 50 cents under the market price, everyone will buy."

Taking to the road

While satisfying customers and being flexible enough to meet special market demands will get you ahead in the lumber marketing game, first you must get out and find those customers. Today, B.C. firms scour the world in search of new or changing markets. Sometimes they uncover some fascinating leads — such as changes in Japanese sleeping habits. The Japanese apparently are giving up their traditional sleeping mats in favour of mattresses. Mattresses have box springs under them — wood-framed box springs. A lot of that wood is provided by B.C. companies. In Germany, where houses traditionally are made of stone, a shortgage of skilled stone masons has led to a demand for houses made of different materials. That's how Germany became a boom market for B.C. house construction lumber.

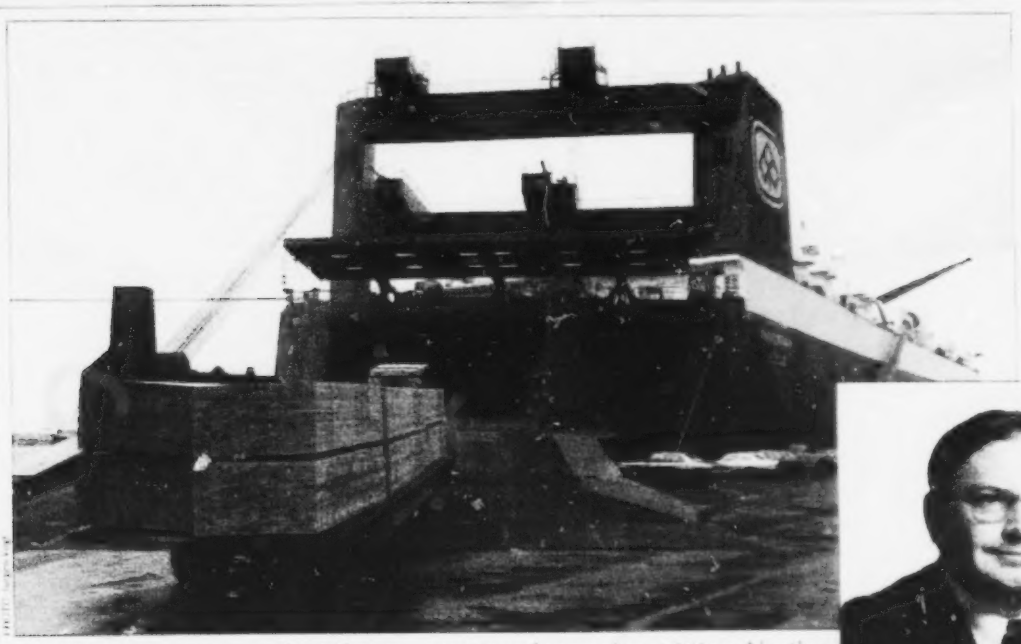
Discovering these overseas lumber markets is one area where Canadian companies have the jump on their U.S. counter-parts. Seaboard Lumber Sales, which represent 22 member companies from Canfor to Raven Lumber, has been in the game for 45 years. It has offices in New York, Tokyo, Sydney, London, Paris, Utrecht, and Hamburg, plus agents and representatives throughout the world. The Council of Forest Industries, an association of B.C. lumber-producing firms, is actively promoting the use of B.C. lumber in Japan, the United Kingdom, Australia and Europe. Individual companies like MacMillan Bloedel have sales offices in every part of the world. A number of less well-known firms are just as busy.

"Demand in Common Market countries is growing at two per cent a year," says Ted Cameron of Seaboard. "But supply over there is growing at only one per cent." That leaves a considerable opening for B.C. lumber marketers, if they go about it in the right way. "Export requires a number of exercises . . . broadening your vision," notes Cameron. So, if B.C. firms want to diversify their markets they will have to learn new rules to the game.

Planning new moves

Railway lines that once served small towns have been abandoned, and the shipping of carloads of lumber to local lumber yards is fast becoming just a memory. Today, regional wholesale distribution yards buy lumber by the carload, then deliver mixed truckloads to retailers. Lowes in the U.S. has half a dozen distribution yards serving their more than 200 retail stores. In 1953 Georgia-Pacific had a half dozen wholesale distribution yards, now they have 166.

If wholesale distribution yards help companies market their lumber,



Today many B.C. firms scour the world in search of new or changing lumber markets, but Seaboard Lumber Sales, which represents 22 member lumber companies, has been playing that game for 45 years. It has offices from New York to Sydney and agents located throughout the world. As Seaboard vice-president Ted Cameron (above) points out: "Export requires a number of exercises in broadening your vision." And while some B.C. lumber mills have been forced to shut down temporarily in response to the slumping U.S. housing market, experts predict a general increase in B.C. lumber exports throughout the decade.

wouldn't company-owned retail outlets help even more? Crown Zellerbach thinks so. They've been operating CrownMart retail lumberyards for years. There are 25 of them in Alberta and Saskatchewan, and the company is expanding with HomeTown home centres which sell housewares and floor coverings as well as lumber. In the U.S., Boise Cascade has one hundred retail outlets; Louisiana-Pacific has bought a chain of over one hundred retail stores.

Some U.S. firms go even further to market their lumber. That means manufacturing. They make any number of wood products, including kitchen cabinets and roof trusses. Some companies own housing developments which sell finished homes. In British Columbia, most firms have been far more conservative in their marketing operations, more reluctant to get involved in unfamiliar territory. But marketing trends are changing. "The next revolution you'll see in the B.C. forest industry," says one company sales manager "is firms being forced to market their lumber in a big way — instead of merely taking orders."

For lumber producers to expand their marketing techniques, they must have a good idea of what's going to happen in the lumber market in the near future. They already know, for example, that the home remodelling market in the U.S. is worth over $40 billion a year. Their computers mull over such things as the possibility of a genuine depression hitting North America; the time of year when air-dried lumber from the Canadian prairies will come onto the market; or the change of styles in home design.

"No projection is perfect," says Bill Johnson of Boise Cascade, "but we see a demand in the 1980s for perhaps 1.9 million new homes a year. The post-war baby boom generation is now 24 to 35 years old. Our surveys show that their goal, despite all the talk about changes in life-styles, is still to have a single family suburban home. The peak in this demand will come in about 1985 to 1987. In the 1990s we'll begin to pay the price of this success as the population begins to age. What this means is that when we look at a new plant being built today, we have to realize it may be surplus ten years from now."

Van Scotfield of the Council of Forest Industries sees the 1980s the same way, but takes a more positive view of the 1990s. "Sure, there'll be a slackening in demand for single family homes," he agrees, "but with an increasing percentage of wood being exported, and with a change in types of demand — senior citizen homes for example — the industry will continue to move forward."

Who's right? Some firms are betting one way, some the other. It's a multi-million dollar gamble that some companies are bound to win. And others are bound to lose. That's the final rule of the lumber marketing game.

ForesTalk
Interviews

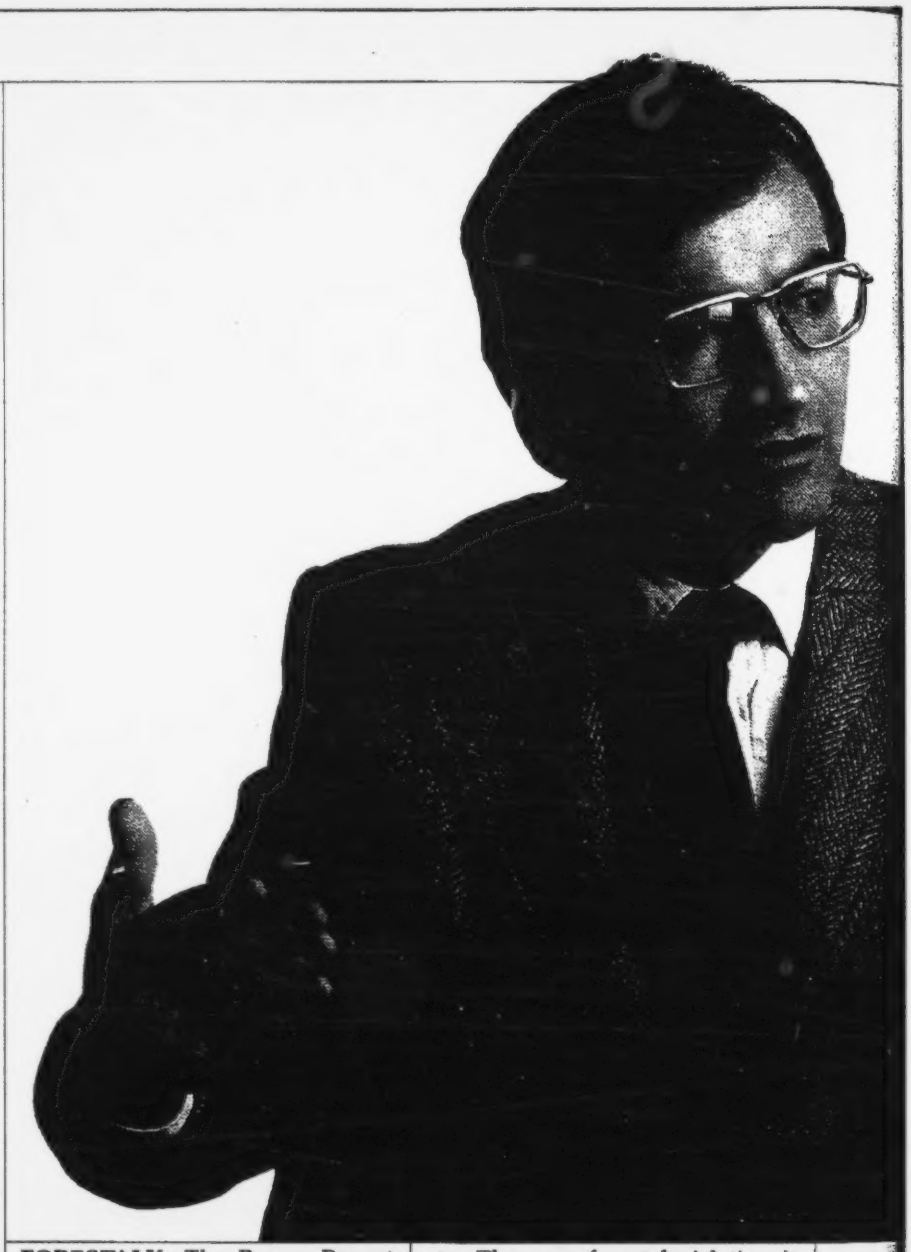
Dr. Peter Pearse

by **Peter Grant**

Dr. Peter Pearse came into public prominence in the mid-1970's when, as the government's one-man Royal Commission studying British Columbia's forest resources, he travelled throughout the province to hear the views of everyone and anyone wishing to comment on forest management in B.C. His 400-page report, Timber Rights and Forest Policy, *was published in 1976 and quickly became known as simply "The Pearse Report". By any name, his collection of observations and recommendations formed the foundation for the sweeping revision of the province's forest legislation contained in the Forest Act, Range Act and Ministry of Forests Act of 1978.*

With his knowledge of politics, economics and forestry, University of British Columbia economics professor Peter Pearse was well-prepared to undertake the Royal Commission inquiry. Raised in the Okanagan and Kamloops area, he studied forestry at U.B.C. and, after completing graduate studies in political economy at Edinburgh, Scotland, returned to U.B.C. where he has established a wide reputation in the field of natural resource economics. Recently Dr. Pearse was awarded the Association of B.C. Professional Foresters' Distinguished Forester Award.

It has been two years since the introduction of the new forest legislation, and recently Dr. Pearse took time out from a busy schedule to reflect on the Pearse Report, the new forest legislation, and the future of B.C.'s forest industry. Although he finds that some parts of the new forest legislation do not reflect his views on forest policy as expressed in his report, he is quick to point out that the new legislation is "a masterpiece in the way it is drafted".



FORESTALK: The Pearse Report laid the foundation for the development of the province's new forest, range and recreation legislation which came into effect in 1978. What is your overall reaction to this new legislation?

PEARSE: I think the legislation is a masterpiece in the way it is drafted. It has exceeded my expectations in terms of clarifying the Crown's responsibilities and the rights and obligations of timber licencees. British Columbia's legislation for natural resource industries — the Fish and Wildlife Act, the Mining Act, the Water Act — is rife with ambiguities and ministerial discretions, which in my opinion are not very appropriate. The new forest legislation is precise and well organized.

FORESTALK: Are there any aspects of the legislation with which you disagree?

"I happen to think that the issue of consolidation, or concentration, in the forest industry is a terribly important one."

PEARSE: There is only one issue on which I have reservations, and I'm hesitating answering your question. I'm gratified that the government incorporated into its forest legislation as many of my suggestions as it did.

PHOTO: John Thomson

It sounds a bit like a dog in the manger to come along afterwards and say: "You've done everything right — except this!" But I happen to think

"The industry is growing, but the resource is being concentrated in the hands of fewer and fewer larger and larger companies."

that the issue of consolidation, or concentration, in the forest industry is a terribly important one. Although I brought this out in my report, the government clearly was not convinced by my arguments on this point.

FORESTALK: Has your concern about the concentration of the industry changed at all since your study?

"The government should not be encouraging bigness; it ought to take an unbiased view and let the market sort out who is efficient and who should get the timber."

PEARSE: If anything, it has increased. The industry has been consolidating very rapidly in the past few years. The industry is growing, but the resource is being concentrated in the hands of fewer and fewer larger and larger companies. The pace of concentration hasn't abated since my report was written in 1976.

I went to great pains in my report to recommend the removal of the biases in the forest tenure system which encouraged consolidation, so that small operators could compete with the big operators. As far as I can see, in the logging and sawmilling sectors there are limited economies of scale; small operators are often just as efficient as big ones. The government should not be encouraging bigness; it ought to take an unbiased view and let the market sort out who is efficient and who should get the timber. But it has left certain forces in the tenure structure that will continue to encourage consolidation. In other words, the only way a company is going to be able to grow is by buying somebody else out.

FORESTALK: How much competition is there in B.C.'s forest industry, compared to other places?

PEARSE: We allocate almost no timber in British Columbia through competitive sales. It's all parcelled out on a bilateral arrangement between the government and the companies, and the price is negotiated.

In the United States, nearly all public timber is allocated through public auction. Competitive sales serve their normal market function of helping to sort out the allocation of timber among the efficient operators. Also, when people bid against one another they never pay more than they're willing to. One result is that the consolidation of the industry isn't nearly as marked in the United States.

But I didn't recommend as much competition as in the U.S., only that a substantial fraction of the timber allocation in each Public Sustained Yield Unit [currently being reorganized into Timber Supply Areas] be made available through competition. The new legislation allows for this, but I fear that there will be little timber available for competitive sales.

FORESTALK: While your report recommended more competition in the forest industry, it also stressed the need for security of tenure. Can you explain your thinking on this?

"We must give a reasonably secure raw material supply to people who invest in the industry, so that they can operate efficiently and do their investment planning."

PEARSE: I recommended strengthening the security of licencees in various ways. We must give a reasonably secure raw material supply to people who invest in the industry, so that they can operate efficiently and do their investment planning.

I also felt, however, that we had to retain some flexibility in the way the Crown allocates its timber. It's important for the Crown to be able to reallocate some timber to accommodate the changing needs of the industry, and to meet the other demands on the forests. Nobody knows what the forest industry is going to be like 50 years from now. As a result of this legislation, however, it appears that the Crown's commitment to existing holders of timber rights is locked in more firmly than before.

FORESTALK: In your view, could this situation pose problems for the forest industry?

PEARSE: I keep telling my friends in the forest industry that unwittingly they may be undermining their own position by always pressing the government for even firmer commitments of timber. If one reads the history of forest policy in Canada — in Newfoundland, in New Brunswick, Quebec, Ontario, British Columbia — you'll find instances where the Crown has made commitments of a very long-term nature, subsequently regretted it and used legislation to abrogate these commitments.

In B.C. we've got an enormous forest industry; nearly half the forest industry of Canada is located here. There's room for scores of companies of efficient size. Corporate consolidation isn't necessary. Monopolies do not serve the public interest; that's why every advanced industrial country has extensive legislation for the control of monopolies.

"I wouldn't mind consolidation at the top of the industry if there was room at the bottom for the smaller operators to grow and for new operators to have access to timber."

If small firms are locked in at the bottom and have no opportunities to grow, then I think we've got a dangerous situation. I wouldn't mind consolidation at the top of the industry if there was room at the bottom for the smaller operators to grow and for new operators to have access to timber.

FORESTALK: Doesn't the new legislation make provisions for the allocation of timber to smaller operators?

PEARSE: As I understand the new legislation, Crown timber which is not committed to the major companies can be made available to these smaller operators through competitive short-term timber sale licences and the small business program. How much timber that will be has not been decided yet.

FORESTALK: In your report you stressed the need to take changing world markets into account when framing forest policy. What trends do you see in B.C.'s forest industry in terms of our place in world markets?

"With its rate of development, the southern United States is going to be our real competitor."

PEARSE: I'm less inclined to comment on the short-term outlook than on the long-term. In the long run there are several trends I can point to. Our special advantage lies in our very high-grade stands of old-growth timber. That's what we've been cutting away at all this time, and that's what the rest of the world has been wanting to buy. But these extensive stands of old-growth are diminishing, and we're going to have to make a transition to second growth — soon. The kind of timber we're going to be using has no real advantage over the kind of timber which can be produced, for example, in Europe, the southern United States, and the East. So the uniqueness of our resource is going to decline.

PHOTO: John Thomson

There are trends in the rest of the world as well. In the past few decades there has been a vast opening up of tropical hardwoods and other stands in the less-developed world, partly because of technological changes which enable us to use new kinds of wood. Another trend is the rapid growth of plantation forestry in places like Brazil, Australia and the southern U.S. With its rate of development, the southern United States is going to be our real competitor. There's going to be a lot of timber coming out of those plantations, and they can now use that young material for making plywood, or virtually any wood product.

FORESTALK: How can our forest industry adapt to these trends?

PEARSE: I doubt that we're going to be struggling to the tops of mountains a hundred years from now to get a second crop. I think what's going to happen will be roughly comparable to the trend in agriculture: you withdraw from taking simply whatever nature has to offer and instead adopt intensive management of more homogeneous forest crops on sites that are manageable — valley bottoms, for example. And we will grow the kinds of forests that are suited to the products we want to produce, rather than adapting our products to the raw material.

FORESTALK: The biggest challenge facing forest managers today is meeting our economic wood needs while tapping the other values of the forest. The key to this is the rate at which we harvest our timber?

PEARSE: The rate of harvest is the most important economic decision made by the government in this province; it determines the availability of raw material for our biggest industry.

The first problem is to get a handle on how much merchantable, or economically-recoverable timber there is. We have huge quantities of data on the forests of this province. During the 1950s the Forest Service's Inventory Division developed a world reputation for its innovative techniques of inventorying vast tracts of wilderness. They did a brilliant job of adding up the volume of wood in every tree of every species in every site in British Columbia. But the data are not interpreted in a meaningful way.

"With a relatively simple econometric technique we can now estimate what it would cost to log a particular type of timber in a particular location."

The kind of analysis that needs to be done doesn't require a host of new information — just a little more sophisticated look at the data we already have. It can be done very quickly with computer technology. With a relatively simple econometric technique we can now estimate what it would cost to log a particular type of timber in a particular location.

FORESTALK: Given the concerns expressed in this interview, are you still mainly pleased with the new forest legislation?

PEARSE: It is a model of how to write natural resource legislation. Much of the content is good, but in certain respects, especially its ultimate impact on the structure of the forest industry, I do have reservations.

THE FOREST RANGERS
OF POWELL RIVER

Powell River 1921 struggle mill (top left) Photo: B.C. Provincial Archives. *George Cook Lookout man in 1930's (top)* Photo: Bill Black. *High Rigger 1926 (right)* Photo: Vancouver Public Library. *Powell River Forest Service Office (bottom)* Photo: Bruce Ober. *Early Powell River logger (foreground)* Photo: Vancouver Public Library

by **Bruce Ober**

When the British Columbia Forest Service was created in 1912, the Forest Ranger was a generalist, someone who was equally at home fighting forest fires or cruising timber. Often living in isolated locations, he ranged the uncharted forestlands on foot, on horseback and by boat. Today, forest management requires different skills; the generalist is giving way to the specialist. The position of Forest Ranger is disappearing, and not without some regret, for the men who bore that title left an indelible impression on the province. Take the case of Powell River.

In 1912 the first ton of newsprint manufactured in western Canada rolled off the paper machines at Powell River, the same year the B.C. Forest Service was set up to oversee the province's forests. Forest Ranger Bill Black first served in Powell River back in 1920, when it was a frontier mill town and schoolgirls' races provided one of the few diversions for the hardworking mill hands. Black, his wife and daughter spent a year living in a tent before moving to permanent Forest Service quarters.

PHOTO: Bruce Obee

The year was 1920. Rubbish and waste paper were piling up in the Powell River Ranger Station. As a lowly clerk, it was Bill Black's job to keep things tidy. His supervising ranger was in the field, so Black slipped outside and stuffed the trash in a wood-burning stove used for heating the ranger's tent. A few moments later he glanced out the window and, through a smokey haze, saw only the stark outline of the stove standing alone beside a smouldering mound of ashes.

"I looked out there and the tent was gone. I'd been here only a month or two, was supposed to be the assistant to the supervisor, but that's all I could do — burn down tents."

Bill Black is 90 years old now, retired and living in Powell River. There's a prankish grin on his face as he recalls this bit of personal history. "The ranger took it quite well, fortunately. I sure was pleased that he did." The mishap was soon forgiven. Within three years Black was a Forest Ranger in the Fraser Valley, where he served until 1927. That was the year Bill Black returned to Powell River as ranger.

PHOTO: B.C. Provincial Archives

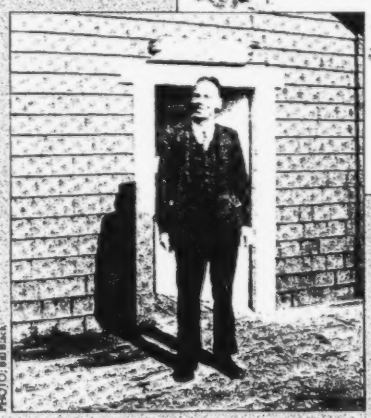


PHOTO: Bill Black

When Lands Minister William Ross formed the Forest Service in 1912, he wanted the province's first rangers to be "men of all-around ability and experience." Bill Black was among those men. He managed the Powell River Ranger District at a time when equipment was primitive, access rough, communications poor, and staff limited.

The ranger of Black's day was a jack of all trades, a man with a variety of skills who was expected to be as confident cruising timber on a mountainside as he was negotiating timber sales over a boardroom table. He was a firefighter, timber cruiser, scaler, public relations man and office manager.

But even before Black retired in 1955, the ranger's days in the woods were ending. Technology was modernizing the forest industry and "forest management" was a phrase heard with increasing frequency. By the end of 1979, the Ministry of Forests was in the midst of a complete reorganization which saw the phasing out of Forest Rangers and Ranger Districts. Today, B.C.'s former 99 Ranger Districts are being replaced by 46 Forest Districts which fall into six Forest Regions. Each district is headed by a "District Manager," a title which more accurately describes the role of the person in charge.

"Forest Ranger," however, suitably described Bill Black's position during his early years in Powell River. Although Black had his fair share of office work to take care of, much of his time was spent roaming the valleys of the Coast Range by foot and in a Model-T pickup, or travelling the waterways and inlets which bordered the forests. The Powell River Ranger District encompassed about 11,000 square kilometres between Malaspina Peninsula and Jervis Inlet, with Douglas fir, hemlock, cedar, balsam, cypress, some spruce and white pine dominating the forest landscape.

Although a few pioneering loggers had successfully carved a livelihood from the woods of the Coast Mountains before the turn of the century, major industrial development in the Powell River region got underway only in 1909, when Dwight and Anson Brooks, along with M.J. Scanlon, incorporated the Powell River Paper Company. After overcoming a few financial snags, the firm was reorganized in 1911 as the Powell River Company. In 1912 the first ton of newsprint manufactured in western Canada rolled off the paper machine at Powell River.

PHOTO: Vancouver Public Library

PHOTO: B.C. Provincial Archives

The Powell River Company's project wasn't confined merely to the construction of a pulp and paper unit. It involved the development of an entire community, with all the amenities needed to support the employees and their families. But it began as a mill town with bunkhouses for 500 men and a few dozen tents outside the townsite. By the time Black retired in 1955, Powell River was the world's largest single-unit producer of newsprint.

Of all of Black's many and varied duties, the most worrisome one was fire protection. One blaze, the "Lund Road fire of '38," he remembers most vividly: "It seemed that in spite of anything we could do it would tramp along, continuing to spread. I remember we had quite a time locating it because it was about a mile into the bush from the road. I know I scoured the whole district for men. There must have been about 150 I suppose. It burned from early July until about the end of September."

Although Bill Black wasn't Powell River's first Ranger, he was the first to remain there for any length of time. Records of his predecessors are sketchy, but it appears that a number of rangers were stationed there for short periods. The rangers who succeeded Black — Ron Jones, Stan Hollinshead, and Bruce Horning — not only witnessed the ambitious growth of Powell River; they played a role in the shaping of its history. The basis of the community was the forest industry and these men were empowered to administer the policies and laws which governed that industry.

A problem which had been simmering in Black's later years seemed to be coming to a head when Ron Jones took over in 1955. Besides large companies like O'Brian and Mahood Logging, there were more than two dozen gyppos, or small operators, working in the woods around Powell River. These companies bid against each other for timber, and the competition was frequently a source of friction. As Forest Ranger, Jones was often called upon to referee backwoods disputes among small operators. "The ranger was stuck right in the middle," says Jones. "You had tremendous power if you felt you were strong enough to use it, but you had to be extremely diplomatic."

Adding to the frustration of loggers was a new approach to forest management by the Forest Service, the introduction of new forestry principles aimed at improving timber harvesting standards and minimizing wood waste. Timber management licences, established to give the

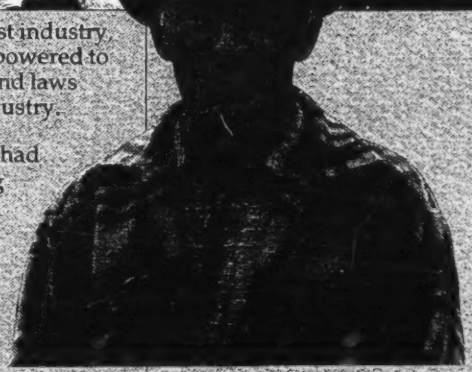


PHOTO: Rod Lewis

Construction gangs were hard at work building the Powell River Company paper mill in 1910, and by 1927 the company town could boast such amenities as a fire hall with two shiny fire engines. Through the decades administering the forests became increasingly difficult as various small logging outfits struggled with each other (and with the Forest Service) for timber. In the mid 1950s Forest Ranger Ron Jones often found himself in the centre of tense backwoods disputes.

PHOTO: Bruce Ofner

PHOTOS: B.C. Provincial Archives

PHOTO: Bruce Ofner

PHOTO: Stan Hollinshead

Stan Hollinshead, Powell River Forest Ranger from 1957 to 1978, witnessed the 1959 MacMillan Bloedel acquisition of the Powell River Company and the creation of the MB Tree Farm Licence there. The old ways were fast becoming just a fond memory, and Forest Ranger Hollinshead gradually shed his traditional role of outdoorsman (and boatman) for the skills of a forest manager and administrator. Bruce Horning, who saw environmentally sound logging practices as a prime management concern, would prove to be the last Forest Ranger of Powell River.

government better control over forestlands and to encourage sustained yield forestry, had been introduced in other parts of the province as early as 1947. It was only a matter of time before they would reach Powell River, and the more poorly-equipped operators knew the changes would cost them money.

In 1959, two years after Jones transferred to another district, MacMillan Bloedel took over the Powell River Company and all its holdings. A Tree Farm Licence (TFL), encompassing about two-thirds of the Powell River District, was created for MacMillan Bloedel, and most of the remaining timberland was placed within a Public Sustained Yield Unit. This takeover and change in land status seemed to alleviate much of the tension which had built up in the woods of Powell River during the 1940s and 1950s.

The creation of the TFL perhaps lightened the ranger load for Stan Hollinshead, who replaced Jones in 1957; it was simpler for him to deal with a single, large firm than with a number of smaller outfits. But there was a disadvantage: when differences of opinion occurred, Hollinshead usually found himself in the unenviable position of arguing his point with a battery of professional foresters and Vancouver lawyers.

As the forest industry grew and as the gyppos were gradually absorbed by expanding corporations, the Forest Service was compelled to grow as well. By the time Hollinshead took over the Powell River Ranger Station, it had evolved from a staff of one ranger and one assistant during Black's day to a ranger, deputy ranger, three assistant rangers, a dispatcher and two lookouts. Although the ranger's traditional outdoorsman role was changing to that of an administrator, Hollinshead still made an effort to get into the field as much as possible.

"A good many of us rangers had country backgrounds, as I did, born and brought up in close proximity to the woods and logging. Because of this background a ranger loved the outdoors, the woods and the wildlife. But the job changed gradually, very gradually." When Hollinshead was ready to retire in 1978 a considerable amount of his time and effort was put into analyzing logging plans and overseeing logging practices to guard against environmental degradation.

For Bruce Horning, who took over from Hollinshead in 1978, environmentally sound logging was a prime concern: "Personally, I can't agree with continuous clear-cut areas. We are going to introduce environmental

problems. We must give more consideration to high elevation logging, to streams, sensitive areas and game habitat.

"But I think the forest companies are trying to present a better public image, and they're trying to do a better job. And then, of course, we are leaning on them a lot harder than, say, ten years ago. So that is having some bearing on their operations as well."

With the introduction of the province's new forest and range legislation in 1978 and the reorganization of the Ministry of Forests that followed, Horning turned out to be the last person to hold the title of Forest Ranger of Powell River. By late 1979 the Ministry announced that the Powell River Ranger District would be replaced by the Powell River Forest District, headed by a District Manager. This new forest district is nearly four times the size of the old ranger district, taking in the former Lund and Powell River Ranger Districts.

Horning, however, along with many of his fellow rangers, expresses some reservations over the elimination of the title of "Forest Ranger" which, he says, has given the Forest Service a uniqueness, an identifiable image. "It's a distinct thing associated with the Forest Service. The title now is 'District Manager,' and, as we all know, everybody has a manager, from department stores and banks to fruit and vegetable managers in a food store. Everybody has a manager."

There can be little doubt that a change of image will occur as the Forest Ranger of a Ranger District is phased out and a District Manager of a Forest District moves in. But today, forest management requires more of a management team style of operation, and the men who were rangers under the old system will either become District Managers, field supervisors or forestry specialists.

The first District Manager in Powell River is Barry Mountain, former ranger supervisor with the Ministry's Vancouver Forest Region and ranger at half a dozen locations. He is just settling into his new management duties. "I see my job more as a manager of people," he says, "making use of the expertise of the foresters, forest technicians and administrative specialists."

Mountain is in charge of close to one hundred permanent and part-time employees. And whereas the Powell River Forest Ranger reported to a head office in Vancouver, the Powell River District Manager now has much of that head office authority.

Many British Columbians cherish the idea of the British Columbia Forest Ranger backpacking his way through dense forests. But that image is decades out of date. Out of necessity, the role of the ranger has evolved into that of a manager. Still, the B.C. Forest Ranger will never be forgotten.

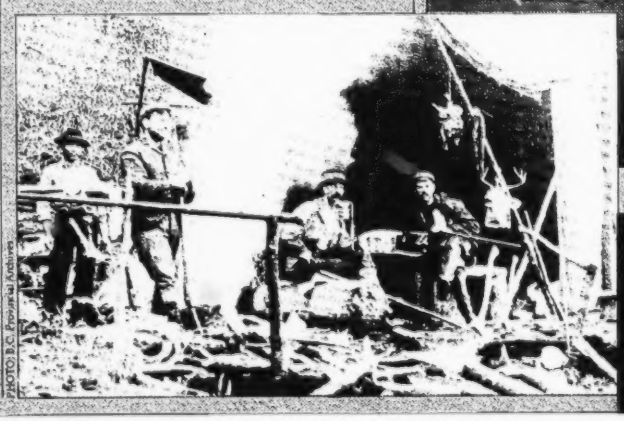


PHOTO B.C. Provincial Archives

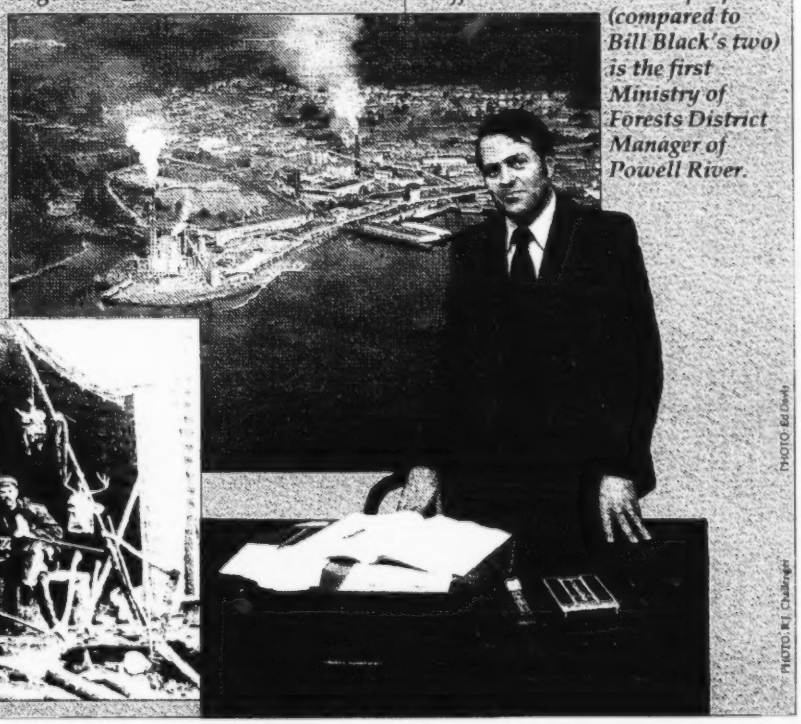


PHOTO R.J. Challenger

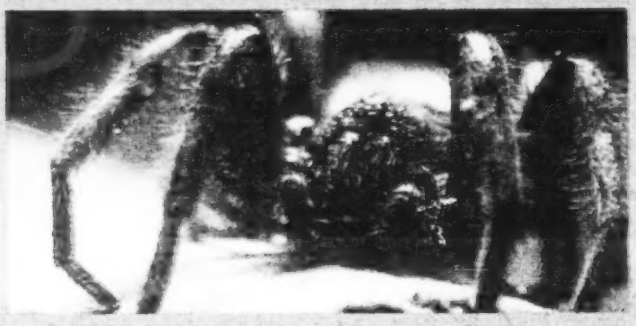
PHOTO Ed Grieb

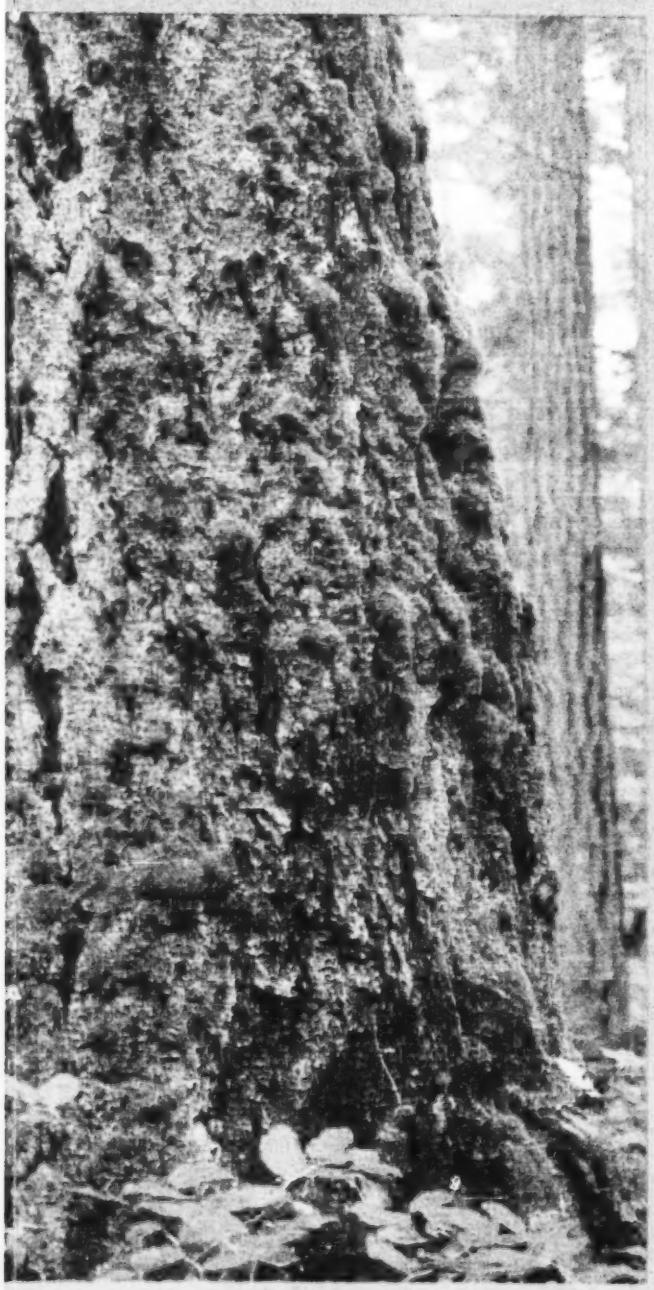
In the early 1900's a survey crew (left) located the site for Powell River, which by 1955 had grown into the world's largest single-unit producer of newsprint. For 68 years the Forest Rangers saw to the management of the surrounding forests. Today the increasingly complex demands of forest management require a management team style of operation, not the skills of a generalist. And throughout B.C. Forest Rangers and Ranger Districts are being replaced by District Managers of Forest Districts. Barry Mountain, whose staff numbers close to 100 people (compared to Bill Black's two) is the first Ministry of Forests District Manager of Powell River.

Bark

The Microhabitat

by Gary and Judy Greer





Collections

THE OTHER DOUGLAS

The Douglas fir owes its name not to Governor Sir James Douglas, but to an energetic Scottish botanist who travelled tirelessly throughout the Pacific Northwest, California and Hawaii, discovering and naming hundreds of plants along the way.

As a botanical collector for the Horticultural Society of London, David Douglas was sent in search of the countless flora of the new world, especially those plants whose seeds could thrive in the temperate English climate. He crowded a lifetime of work into the decade between 1823 and 1834, collecting his specimens with a passion and in the process covering more than 12,000 miles on foot, horseback and canoe. It is generally claimed that there are few English gardens which do not boast at least one ornamental plant derived from Douglas's collections.

The personal side of Douglas's story is at least as fascinating as his scientific accomplishments. He spent considerable time scouting out the plant life along the Columbia River at a time when Britain and the U.S. were still squabbling over who had jurisdiction over the Pacific Northwest. Part of Douglas's mission was to carry out a land survey of the territory he was exploring to further England's ultimately unsuccessful claim to the area. He was a tireless walker, and his journeys took him through many Indian territories where few white men had yet travelled. He is said to have learned several Indian dialects and is thought to have had a brief marriage with the daughter of an Indian chief.

In July of 1834, when he was just 35 years old, David Douglas met an inglorious end while climbing Mount Mauna Kea on the northern tip of the Island of Hawaii. The circumstances leading up to his death are still clouded in suspicion, but whatever the reason, he wound up at the bottom of a six-foot pit — a trap dug to catch wild cattle — and apparently was trampled to death by a trapped bull.

His hundreds of discoveries won David Douglas widespread recognition, and fellow botanists have named no less than 86 plants in his honour. Although he was not the first European to report on the Douglas fir — that distinction was achieved in 1795 by Dr. Archibald Menzies, surgeon-botanist with Captain George Vancouver — Douglas was the first to return sample specimens, complete with cones, to England. In 1803 the tree was first given the scientific name of *Pinus taxifolia*, but during Douglas's lifetime fellow botanists changed it to *Pinus douglasii*; the tree's common name has been 'Douglas fir' ever since. Through the subsequent years the Douglas fir has continued to undergo various changes in its scientific name, and today it is known officially as *Pseudotsuga menziesii*.

PAPER WITHOUT WOOD

While probably aware that the paper money we handle each day has a certain linen content, most people in B.C. simply assume that almost all paper is produced from wood. On the contrary, there is a vast potential for making paper from non-wood sources, including agricultural waste. In 1975, the total world capacity for producing pulp paper was 136 million tons; of this, 9.3 million tons were derived from sources other than wood. China supplied about half this amount, mainly from the fibre of straw and bagasse (the fibre of the sugar cane after the juice is squeezed out). Other countries have experimented with making paper from flax (in Belgium, flax is used extensively in the production of particle boards), hemp, maize, jute, palm fibres, rice husks; wheat, straw and peanut shells, and cotton.

Wood is Wud is Whode

The word "wood,' now standardized in modern English, has passed through many variations along the way. These include: *widu, wiodu, wudu, wude, wode, wodd, woode, wod, wodde, vod, woud, voud, woyd, whode, vode, voode, woodde, wud, wdde, uud,* and *widd*.

'Tree' has a more modest pedigree, including: *triow, tryw, treow, trew, treo, tre, trough, trey, trewe,* and *trauwe*.

Who put the Presto in Presto Logs

Presto logs are not, as many people seem to believe, made from the sweepings off the sawmill floor, somehow mysteriously glued together. True, they are made from waste material of a sort, but it is more of a planned waste; and this basic material comes from plywood mills, not sawmills.

Baked plywood panels are made rough and oversized, and then trimmed to specification, leaving behind a volume of unused ply material. This plywood residue is collected and run through a hammer mill which chops it into coarse particles. Since this material already contains a certain amount of glue from its previous incarnation as plywood, all that remains to be done is to mould it — at a high temperature and under extreme pressure — into the dense round logs so widely used to replace or supplement the traditional supplies of cordwood or driftwood burned in home fireplaces.

ONCE WAXED TALL

Before the discovery of the California redwood, the 200-foot Andean wax palm *(Ceroxylon andicola)* of South America was considered to be the world's tallest tree. This greatest of palms grows at higher elevations than any other palm tree. Usually, palms do not occur above the 4,000 foot level, but the giant wax palm is found at 10,000 feet in the Andes mountains of Colombia and Venezuela. A shorter-trunked species grows at the even more remarkable height of 13,450 feet.

The name 'wax palm', refers to the wax which entirely coats the slender, pencil-straight trunk, giving the tree the appearance of a marble column. Though the wax has only local use, the tree has found a more important calling: it appears on postage stamps as the national symbol of Colombia.

TAKE A DEEP BREATH

Trees are the world's perfect air filtration system, consuming carbon dioxide in the atmosphere and returning it as fresh oxygen; one good-sized mature tree can absorb all the carbon dioxide emitted by 800 modern homes. (The world's oceans are the other main global air conditioner.) But what happens to the quality of the atmosphere as the world supply of trees continues to decrease?

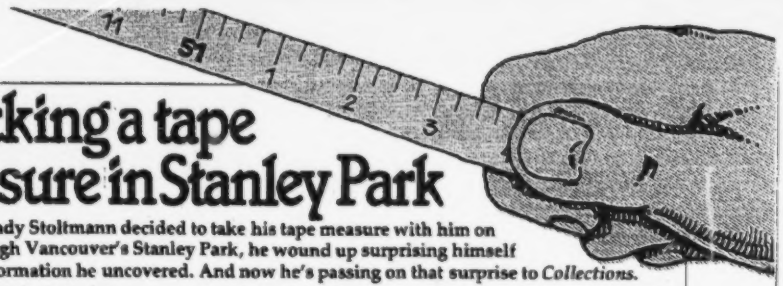
The pioneer agricultural explosion in the past 150 years in North America, eastern Europe, Australia, New Zealand and South Africa, during which vast forests were burned to produce land for farming, probably has increased the concentration of carbon dioxide in the earth's atmosphere by 10 per cent. This demonstrated increase led to a 0.5 C. rise in global temperature in the late 19th century.

Recent research indicates that the current world output of carbon dioxide from the burning of fossil fuels could be easily absorbed by the earth's plant growth — if our forests were left alone. But approximately 27.5 million acres (11 million hectares) are cut down annually. Roughly half the earth's forests have disappeared since 1950, with the bulk of this deforestation occurring in the world's tropical zones. One estimate suggests that the global supply of exploitable timber again will be cut in half by the end of the century. The result will be a significant increase of carbon dioxide in the air, producing an alteration of the delicately balanced atmosphere. This in turn may result in critical changes in the earth's climate.

This decrease in global timber reserves will also have a dramatic effect on the global land base. Some foresters envision the possible destruction of rivers and agricultural land, and the wide-spread extinction of potentially useful plants and animals. There also will be an acute shortage of firewood, which one third of the earth's population (1.5 billion people) rely on for cooking and heating.

To counteract these disastrous trends, much more importance will have to be paid to global reforestation, especially in tropical locations. The task is enormous: the World Bank estimates that 50 million acres of trees would have to be planted in the next 25 years just to meet basic firewood needs. Given current rates of reforestation, it predicts that no more than 5 million acres are likely to be planted.

Packing a tape measure in Stanley Park



The day Randy Stoltmann decided to take his tape measure with him on a hike through Vancouver's Stanley Park, he wound up surprising himself with the information he uncovered. And now he's passing on that surprise to *Collections*.

"Many British Columbians may not realize what magnificent trees stand within Vancouver's Stanley Park. From my own measurements – taken 4.5 feet above ground level – I discovered many western red cedars to be more than 30 feet in circumference at breast height, with some exceeding 40 feet. One giant has a breast-height circumference of 51 feet 7 inches, making it more than 16 feet thick! The largest known western red cedar stands in Olympic National Park in Washington, and is just over 66 feet in circumference.

"The bigleaf maples are even more notable. Two maples in Stanley Park are actually larger than the presently recognized 'largest known' bigleaf maple located in Oregon. Both trees are over 30 feet in circumference, and several other maples come close to record size."

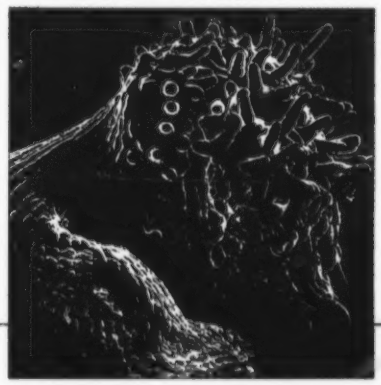
Randy Stoltmann, *Vancouver, B.C.*

Forestry under glass

No, it's not another outlandish Muppet creation; what you're looking at is an extreme close-up of a female Douglas fir cone about to be fertilized. This image and many more like it, produced by a scanning electron microscope operated by Dr. Jack Owen of the University of Victoria biology department, are valuable tools for Ministry of Forests researchers involved with seed orchard management.

The seed orchards contain off-shoots from some of the best trees found anywhere in B.C. The trick is to selectively cross-pollinate these trees to develop even better growing stock for future reforestation programs. But it's a delicate procedure. There is only a short period each year when the ovules in the female cone can receive pollen. With the aid of the pictures from the scanning electron microscope, the researchers can pin-point almost to the day the best time for hand-pollinating the cone.

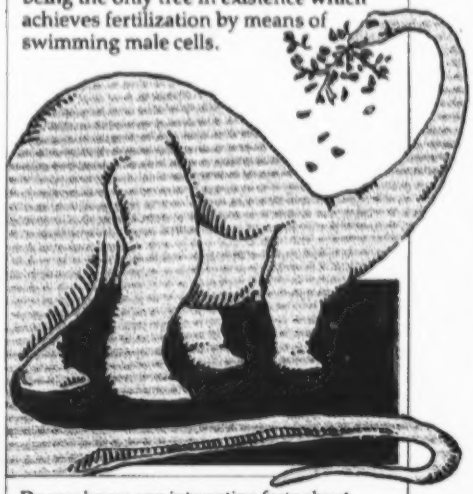
The worm-like protrusions in the top of the picture are stigmatic hairs in a state of readiness to trap any passing pollen. One grain of pollen has already been trapped (that's the round object in the lower right) and will be channelled into the ovule opening, which is the dark vertical line cutting through the array of stigmatic hairs. This ovule almost certainly will be fertilized, resulting in a Douglas fir seed. If the pollen grain had arrived just a few days later, the opening would by then have closed over and no fertilization could have taken place. By using pictures from the scanning electron microscope to inform them of exactly when the ovule is open and ready to receive pollen, researchers virtually can guarantee the success of their pollination program.



GINKOSAURUS

The ginko, or Maidenhair tree, is one of the world's oldest living tree species. The same tree which today is grown largely as a domestic, ornamental tree has survived for over 125 million years in its present form. This means that its ancestors would have witnessed the birth of the Rocky Mountains (in an age when Washington State was a subtropical zone) and suffered dinosaurs nibbling on their leaves.

The key to the ginko's outstanding survival record is its ability to adapt to adverse environments; it is also remarkably free from natural enemies in the insect world. Interestingly, its sex life is unique among higher plants, it being the only tree in existence which achieves fertilization by means of swimming male cells.



Do you know any interesting facts about forests? Don't hold them back. Collections deals with anything from machinery to forest products and uses, from unusual facts and interesting people to forest legends. We invite you to contribute. Mail submissions to: ForesTalk — Collections, Information Services Branch, Ministry of Forests, 1450 Government St., Victoria, B.C. V8W 3E7. Information should be brief, accurate, and sources included where possible.

UNDERCUTTING OR OVERCUTTING

THE RATE OF HARVEST DEBATE

by Peter Grant

How much timber should B.C.'s forest industry be harvesting each year? It's a question that sparks lively debates in forestry circles. Last year, for example, a report suggested that in Tree Farm Licences on the coast, companies have been undercutting — not cutting all the timber they should. At the same time, some environmentalists charged that Tree Farm Licence holders routinely overcut their timber supply. Are we cutting our timber too slowly? Too fast? How can we know for sure? To throw some light on the matter, *ForesTalk* spoke with four people deeply involved in the debate: Tom Thomson of the Victoria-based forestry consulting firm T.M. Thomson and Associates, who co-authored the report on undercutting for the Truck Loggers Association; Paul George, a biologist who works for native Indian organizations and environmental protection groups; Grant Ainscough, chief forester for MacMillan Bloedel Ltd.; and the Ministry of Forests' chief forester Bill Young. The resulting dialogue provided at least an explanation for the controversy, if not an answer to the question. It turns out that calculating an appropriate rate of harvest involves a host of factors. Some are easy to put a number to; others are open to a wide variety of interpretation, reflecting differences in people's deeply-held values.

A Shortfall in Harvesting

The claim that companies are undercutting their timberlands is based on the figures that Tree Farm Licence (TFL) holders submitted to the government between 1972 and 1977. Consultant Tom Thomson explains: "What we did was summarize *their reports, comparing their reported* cuts with their calculated Allowable Annual Cuts."

An Allowable Annual Cut (AAC) is the limit government places on the volume of timber that can be cut in an area in one year to ensure adequate future timber supplies. Undercutting an AAC means a company may have cut 350,000 cubic metres of timber annually in a given tree farm, for example, where the Allowable Annual Cut is 450,000 cubic metres.

"In the period of our report there was a shortfall in harvesting of an average of over 2.5 million cubic metres a year for coastal Tree Farm Licence holders." Thomson suggests that record meant a loss of jobs and income for B.C.

MacMillan Bloedel chief forester Grant Ainscough defends his company's performance during those years: "A combination of circumstances made 1972 to 1977 the worst possible period the Truck Loggers could have selected to measure the coastal industry's performance: the three-month strike in 1975 when we lost 25 per cent of our production; weather conditions; the adoption of the Ministry of Forests' coast logging guidelines; and, in particular, the market conditions from mid-1974 to 1977, which created a very difficult situation for everybody in the forest industry. However, since the inception of our Tree Farm Licences our actual cut has averaged out at about 98 per cent of the allowable cut."

There is another factor which complicates the effort to judge the harvesting performance of Tree Farm Licence holders. Consultant Tom Thomson points out that these companies take their own inventories, the periodic stock-taking of their timber holdings; they then calculate their own annual rates of harvest from these totals. (The Ministry of Forests performs this function in other Crown forests.) "When some outfits calculate their rates of harvest they make major deductions to allow for the possible loss of merchantable timber from hazards such as fire. Others don't allow anything for these hazards, and there are no uniform standards for determining deductions in the rate of cut. In other words, some companies cut all they are able to get out of the forest and others do not."

The Ministry of Forests has two responses to undercutting, as chief forester Bill Young explains: "We review the Allowable Annual Cuts for *Tree Farm Licences as their working* plans come due. It may be that their allowable cuts need reducing. In other words, there hasn't been an undercut; the allowable cut has been set too high. When we feel the allowable cut is correct and the company is undercutting, then there's a good argument for saving the company is tying up timber. The Ministry has the power to reallocate that timber."

Paul George's claim that Tree Farm Licence holders are overcutting their forests picks up on the rest of Young's points. George says the Allowable Annual Cuts for many management units are too high. He adds that the long-term result of maintaining the present rate of harvest will be an eventual shortage of merchantable timber.

So it seems that the answer to the question of whether we are undercutting or overcutting our forests hangs on the wider issue of how we determine an appropriate annual rate of harvest in the first place.

A Wider Issue

Paul George points to several practices in determining annual rates of harvest which he says

Undercutting occurs when companies don't harvest their full annual allotment of harvestable timber. Consultant Tom Thomson studied the recent harvesting record of coastal tree farm licence holders and concluded: "In the period of our report there was a shortfall in harvesting of an average of 2.5 million cubic metres a year." Thomson suggests that undercutting like this results in a loss of jobs and income for B.C.

have led to overcutting in our forests. For one thing, he claims that current timber inventories allow for the cutting of trees which in fact won't be harvested in the foreseeable future because of high harvesting costs. "During the 1950s the estimates of how much timber was available for harvesting were much lower. In the 1960s they got the idea that all sites, all height classes, all terrains could be harvested, because of technological change. As a result, allowable cuts were greatly increased, and there's been a great boom in the forest industry. We've built a lot of new plants and created a lot of new jobs. But they always take the best timber and leave the worst for later. In an age of expensive fossil fuels, those stunted left-over forests can't be harvested economically."

"The timber inventory should say that what we can cut is what is economically merchantable," George says. "If economic circumstances change, then we can include those other stands and increase the rate of cut."

Another reason why we should reduce Allowable Annual Cuts, George says, is to allow for the preservation of values other than timber, and for the protection of sensitive sites such as steep slopes. "There are places on the coast and in the Queen Charlottes where, if you cut the timber, the slope is going to erode, maybe in massive landslides which often silt up salmon streams. In other places where they have this kind of erosion, such as in southeast Alaska, they withdraw those sensitive sites from the timber inventory. Here, there's no standard."

Paul George's conservation-minded views aren't shared by forestry consultant Tom Thomson. "I think there's a lot more timber available for cutting in B.C., especially in Public Sustained Yield Units [Crown-managed timberland now being reorganized into larger Timber Supply Areas]. Most foresters working out the rate of harvest for a particular forest are concerned about timber losses for environmental reasons, possible forest crop loss due to fire or insect damage, or forest land withdrawals for farms, parks, fisheries or whatever.

"As a result they reduce the allowable cut too much. But if the cut of an area is reduced without real justification, any benefits to the crown and the people are lost."

Two Foresters Respond

Grant Ainscough evaluates the conflicting views of George and Thomson: "The charge that allowable cuts are understated, that they are set too low, I dismiss as uninformed criticism. The concern about them being set too high is valid if you look at it in perspective.

"We have serious concerns about the timber inventories in the Public Sustained Yield Units. Many of them are out of date. They take in all of the timber, including a lot of borderline scrub and isolated, inaccessible patches, and thus don't take account of merchantability. I'd say that these cuts are overstated, given the need for reductions in the allowable cuts to take account of long-range economics, and given the really serious question of logging environmentally-sensitive sites without destroying other important values.

"In the Tree Farm Licences I don't think the situation is quite the same," Ainscough continues. "The basis for their allowable cuts is realistic, although a few may be stated somewhat optimistically. And although we're including in our AAC's timber that we don't know how to log economically today, we feel we are justified in including it in the allowable cut calculation because the volumes and values are there and we expect to be able to log it within the harvest rotation period. Another important factor is that reforestation on most TFL's follows close behind logging, and some

Overcutting occurs when companies cut too much timber each year and don't leave adequate supplies for the future. Environmentalist Paul George believes that much of the timber currently being left for future harvesting never will be harvested at all because of the high costs involved. This kind of overcutting, George says, will lead to future "timber famines." Conserving the remaining old growth coastal stands is central to George's view.

form of silviculture is practised."

Ministry of Forests' chief forester Bill Young takes issue with the suggestions that allowable cuts on Crown land don't take into consideration environmental or economic conditions. "Contrary to what some people think, we have a soil stability classification in our Environmental Protection Area scheme that scales down the gross timber inventory for sites that are excessively steep or subject to erosion. Also, we take areas that are viewed as non-merchantable out of the cut calculations."

Young goes on to offer this update on the process of calculating allowable cuts for Crown-managed forests: "Our people in the field develop the broad prescriptions that are fed into the formula for calculating the rate of harvest. For example, there'll be an estimated percentage of reduction in the harvest because of fishery values in a certain river drainage. Or if you're in a Timber Supply Area where there's caribou, that means another element enters into the calculation.

"As soon as the rate of harvest is set it actually becomes outdated, because there are both negative and positive factors pressuring on it." Negative factors which result in lower rates of harvest include loss of forest land to other uses including urban settlement, agriculture, hydro and road rights-of-way, along with limitations on forest harvesting to protect fishery and wildlife resources. "Some of the positive factors are advancements in

tree-breeding programs, in intensive forestry and in logging techniques. New taxation benefits could bring more marginal agricultural land back into tree farming — that's one way the Scandinavian countries faced their timber shortage. When we can use aspen, a hardwood in the interior, that would mean a big bump on the positive side.

"In the next periodic assessment of the rate of harvest, which will be done every five years, the rate of harvest will go up if the positive factors outweigh the negative; if the negative factors are greater, it will go down."

Falldown

Another important factor which pulls down the rate of harvest, as Grant Ainscough points out, is something known as 'falldown.' "Say you have a hectare containing 750 cubic metres of timber; it took 300 years to grow that volume. When you cut that timber, the same hectare will produce only 500 cubic metres after a normal rotation period of 80 years. In other words, given a low level of forest management, whenever you convert old-growth timber to young growth, your Allowable Annual Cut goes down."

One way to offset this falldown is to increase the volume and value of the second-growth timber through intensive forest management. Ainscough says that in Tree Farm Licences "a combination of better inventories, increased utilization and intensified forestry have basically offset the falldown problem.

"In the Public Sustained Yield Units, however, we're not quite doing the basic forestry of ensuring that the lands are properly restocked within a short time after logging. Unless you go to the next stage of intensified management — site preparation and planting, supported by a good tree improvement program, and basic tending of the stand — so that you get your hectare growing 750 cubic metres instead of 500, then the shortage of merchantable timber described by Paul George will come to pass."

Conversely, George disputes the claim that Tree Farm Licence holders have corrected the falldown effect. "Better inventories and increased utilization have nothing to do with falldown. And intensive forestry has not begun to offset it. It's a myth that the forestry efforts our big companies are making today will save us from a

Against charges of undercutting, MacMillan Bloedel Chief Forester Grant Ainscough cites labour trouble, weather, stricter logging guidelines and unfavourable market conditions as the reasons for lower than average rates of harvest between 1972 and 1977. On overcutting, Ainscough agrees with Paul George that some timber allotments may be too high and promote too rapid a rate of harvest. He says the solution to high rates of harvest, as well as to the related problem of falldown, is better forest management.

timber famine. I don't think Tree Farm Licences are managed all that much better than public lands."

A related issue which helps to complicate the overcutting question concerns the rate of harvesting old-growth timber. Bill Young singles out the forests north and east of Prince George as an example of the impending problem: "There are vast areas of mature and overmature spruce in this area. If you're going to try to keep an even flow of harvested wood going to the mills, you have to maintain that old-growth for many, many decades until the immature timber is ready to harvest. But there's a real risk that this old-growth will not stay around for 60 to 70 years. Nature will harvest it before that, through insects, fire, blowdowns or some other way. This is exactly what is happening in the East Kootenays where the mature lodgepole pine stands are being deforested by the mountain pine beetle."

Similarly, Grant Ainscough favours accelerating the cutting of old-growth timber: "Liquidating an overmature forest as rapidly as possible is very sound forest management. When you've logged it, you end up with thrifty young stands that grow more vigorously, and you've got greater flexibility in managing them."

Paul George, on the other hand, feels we should be husbanding the potential values in our old-growth forests: "The myth in B.C. is that these old trees are rotten and decadent. They're actually gold. We have some of the last of the best spruce, cedar and Douglas fir. A number-one old-growth coastal spruce tree is worth 15 or 20 thousand dollars, and they're going to be worth more and more. We should slow down the cutting, try to parcel out the old-growth and get a higher price for it on the world market."

Preserving old-growth in wilderness areas is basic to George's view: "In 20 years 'super, natural' B.C. may have the best wilderness-oriented tourist industry on the continent; millions of dollars may be flowing in. But I'm afraid that with this timber crunch foresters are saying that we can't afford to save old-growth anywhere, that we have to cut it all to keep up our standard of living. Wilderness areas should be part of the whole design of the system. They're not inviolable. Parts could be managed for quality old-growth and selectively logged some day — if we so decide."

Politics of Scarcity

The debate over the rate of harvest will continue, and there seems to be no easy path to compromise. Allowable Annual Cuts will change, partly because of the fine-tuning of forest inventories to allow for other values and hazards, partly due to the silviculture we practise and the new technology we bring to bear, and partly from changes in the relative value we place on fish, timber and the province's other natural resources.

On this last point, Bill Young points up the Ministry's difficult task of balancing conflicting claims on our forest land: "Our program used to be one of fairly allocating timber, and fairly allocating fish and wildlife and wilderness areas, but today there are few surplus resources left to allocate. We now live in an age which one writer has dubbed 'the politics of scarcity.' If the rate of harvest is going to increase or decrease it will have some effect on the supply of other resources.

"In this debate over the province's rate of harvest, I can understand both Tom Thomson's viewpoint on undercutting and Paul George's viewpoint on overcutting — both are right from their own perspectives. Somehow we have to strike a balance, to meet our economic wood needs as well as tap the other values of the forest. It's not an easy task. Biased as I am, I think this is the greatest single challenge in the province." ◻

"When we feel the allowable cut is correct and the company is undercutting," says Ministry of Forests Chief Forester Bill Young, "then the Ministry has the power to reallocate that timber." As for overcutting, Young points out that rates of harvests are flexible, responding to both positive and negative pressures. He adds: "If the rate of harvest is going to increase or decrease it will have some effect on the supply of other resources. Somehow we have to strike a balance, to meet our economic wood needs as well as the other values of the forests."

LETTERS

This, my first and probably only letter-to-the-editor, is motivated in appreciation of the very generous article by Charles Lillard in the Winter 1979 issue of ForesTalk. He skillfully selected the choicer ingredients and boiled them down into a palatable concentrate and in the process gave me the benefit of many doubts. Peter Robin's photographic portrait was flattering — an extra bonus.

It may interest some old-timers to remark that the "diamond hitch" photo on page 29 was shot at the Little Valley Mine, between Bowron Lake and Barkerville in 1925. We had packed down the Nose Mountain trail from Kelly Lake to Jasper, through the Yellowhead pass, down the Fraser to Goat River, up the latter and over the divide to Wolverine Creek, along Isaac, Indianpoint and Kibbee lakes, arriving at Barkerville August 4. We had sold most of our horses to Curly Phillips and Fred Brewster at Jasper, keeping only three for the trip further west. After weeks on the trail, we put up the horses at a livery stable and ourselves at the hotel. Checking out, the bill for the ponies was more than for us at the hotel. The trip ended at Quesnel after about six weeks and over 500 miles on the trail. At Goat River, Forest Ranger Jack Jowsey and his wife were most hospitable, as were Mrs. Chapin and her partner, Hassler, at Tete Jaune.

After my transfer from the Forest Service to the Survey Branch in 1946, any worthwhile accomplishments during the next 22 years to retirement were due in large measure to the loyal support of my forestry friends of all ranks, who continued to treat me as one of their own, and still do.

Gerry Andrews
Victoria, B.C.

The article on Gerry Andrews reminded me that he is an active and valued member of the B.C. Historical Society, and he is always an inspiration at our annual conferences.

Mrs. M. Maywood
Clearbrook, B.C.

Regarding the Winter 1979 ForesTalk article on horse logging by Anne Edwards and the photography by Patrick Morrow: I have used horses on my farm for the past 13 years for the winter work of hauling fence posts, logs and firewood from the forest (where I am thinning) to the loading ramp — for sale in the summer. Although I assumed others would also be using horses, none were known to me. It seemed that younger people avoided the work involved, thus missing the quiet pleasurable satisfaction of being three in the woods in winter — horse, dog and man.

I am surprised to learn of the use of horses in the logging business. With the age of the machine and the vast loads required to pay for expensive machinery, the rape of the forest increased at such a pace that distances increased beyond the scope of a horse. It is good to see that various companies are now employing horse logging and are helping to maintain the forest as a viable place as well as keeping someone fit and happy. The horse can re-create itself; it also provides the power for obtaining its food supply, its shelter and its "repairs." No machine does this. Again let me say how much I enjoyed the article, a means of learning what is happening around the province.

David Carpenter
Pine-View, B.C.

Your article, "The Quiet and The Clean of Horse Logging," by Anne Edwards in the Winter 1979 issue of ForesTalk was a pleasure to read, and indeed it was a surprise to learn (and see with the beautiful pictures) that horse logging is still being done in B.C. forests.

Horse logging brings back many memories of my childhood, the happy and exciting days spent at the winter logging camps of my father, who logged the Nova Scotian forests for many years. He was a real woodsman who went into the woods in the fall with crews of 30 to 40 men and many horses to yard out the logs. Then teams of horses hauled them to the sawmill. The men lived in roughly-built camphouses connected to a cookhouse where one cook and a helper, called "cookee", cooked enormous pots of sauerkraut, corned beef, boiled beef, stews, and dozens of pies made of dried apples. Logging by horses had appeared to be a tradition that had passed with the coming of mechanized equipment. To read that it is still being done and is being re-vitalized in B.C. was a great source of interest to me.

Mrs. Sarah E. Spicer
Brooklyn, Nova Scotia

The cover of the Winter 1979 issue of ForesTalk took me back over 50 years the instant I saw it. I was 19 years of age when I did my first skidding with horses — a mixture of hewed ties or the suitable leftovers big enough to be used as saw logs. This was around 1928, but logs for sawmills were still skidded when I joined the army in 1940. This was in the bush of northern Ontario, an area alongside the mainline of the CNR and the Algoma Central and Hudson Bay Railroad. During the 1930s I skidded ties for three to five cents a piece, and seven to 10 cents for a 16-foot log. The territory was something like Prince George, and when it got to 50 degrees below F. the horses weren't allowed to work.

What is a story of its own is the size of the loads of logs, ties or pulpwood hauled by horses — with very little environmental damage. May I add that those people past and present engaged in horse logging have what can only be described in one word — devotion — to their horses and occupation.

A. E. Foster
Coquitlam, B.C.

In the horse logging article by Anne Edwards in the Winter 1979 issue of ForesTalk, on page 14 she says: "Given a complete horse logging system, a logger with one horse could produce six cunits (200 cubic metres) a day . . ." A very nostalgic article, Anne Edwards, as I had some of my first years behind horses near Salmon Arm, B.C., but please measure your cunit size a long bit smaller. Also, it was fun balancing on a horse-drawn log or pole, but in 1927 that was a no-no.

Alan Woodrow
Courtenay, B.C.

Six cunits is 600 cubic feet, which comes to just under 17 cubic metres. That is definitely a long bit smaller than the 200 cubic metres mistakenly mentioned in the article.

Letters to the editor provide an opportunity for our readers to discuss topics arising out of ForesTalk. Letters for publication must carry the sender's name and address. Views published are not necessarily endorsed editorially. ForesTalk reserves the right to edit for publication.

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People

John Hetherington

by Grant Ellis

His tools include a good set of golf shoes, a keen eye and a sturdy float plane. His job is buying and selling logs on the Vancouver log market, a unique business where handshakes seal million-dollar deals.

Glistening in the bright sunshine filling Howe Sound, acres of log booms stretch away into a shallow island cove. There are boomed bundles of sawlogs, pulp logs, and peelers for plywood; there are flat-rafted red cedar logs crossed by "swifters" and tree-form booms of loose logs. Howe Sound, along with Burrard Inlet, False Creek and the Fraser and Pitt Rivers make up the world's biggest warehouse, a floating log warehouse without roofs, doors, locks, or, in most cases, security guards.

These logs have been cut along coastal hills and inlets, then towed here to be marketed. Some are barged from as far away as the Queen Charlotte Islands. Many are the property of small, independent companies, and are traded and sold by a select group of log marketers.

The value of the wealth floating here is staggering. Many logs, such as high grade yellow cedar, bring in thousands of dollars each. In one stretch of booming grounds along Gambier Island there are, conservatively speaking, $12 million worth of logs. Yet much of this commodity changes hands without so much as a signature.

A floatplane banks steeply over Howe Sound, skirts the booms at 500 feet, banks again, then glides in to land. The passenger is a brisk, jovial man. He zippers up his floater coat and laces up his golf shoes for a walk-and-hop jaunt across an acre of boomed hemlock. He tags a bundle of logs and returns. John Norman Hetherington, sea captain, mill-hand, executive, independent log marketer, and perennial floatplane passenger, finds himself perfectly at home in this unique market.

A blunt, friendly man, Hetherington spent 35 years at MacMillan Bloedel, leaving as manager of log marketing in 1978. Everything about his appearance and manner says "successful executive." He is 61, but he is far from retired.

"Gene Mulder of Coast Pacific Trading called me from Bellingham after I left MacMillan Bloedel. He said, 'You're not gonna play golf and fish are you?' I told him I wasn't. Now I'm the manager of Coast Pacific's Canadian subsidiary — Copac Trading Limited."

Copac's primary client is Alaska Pulp Company Limited, a Japanese firm that operates a pulpmill and two sawmills in Japan. Hetherington is their Vancouver agent, buying and

trading logs for shipment to Japan. There is a catch, however: raw logs cannot be exported from B.C. without the special approval of federal and provincial governments, and then only if it can be proved that they are surplus to local needs. So Hetherington buys the logs he requires, then sells them to his Japanese customer who pays for them to be custom-cut at B.C. sawmills.

Several Japanese companies work through local traders in Vancouver to get the wood they want. Hetherington estimates that over 300 million board feet are custom-cut in local mills each year for export to Japan.

Hetherington's beginnings did not point to logs or lumber. They did, however, show an affinity for salt water. A Vancouver native, he went to sea in 1937, signing on with the Donaldson line of Glasgow at the age of 19. Then came the war. When the first westbound North Atlantic Convoy of the war left Liverpool in 1939, Hetherington was aboard. By 1943 he had obtained a transfer to the wartime Canadian Manning Pool, and was assigned to the MacMillan-owned Canadian Transport Company. That year he interrupted his travels long enough to marry Montreal singer Anne Bury (after a whirlwind courtship), and take her to the B.C. coast.

Hetherington had joined the Canadian Transport Company as second mate on a 450-foot Victory ship, and by 1945 he had obtained his Canadian Master's foreign-going certificate. When the war ended the government sold the Victory ships, and H.R. MacMillan bought six of the ten he had been operating. Hetherington was quickly appointed Master of his own vessel. The next three years passed in a sort of seaman's dream.

"We just tramped around the world," says Hetherington. "We'd take B.C. lumber to South Africa and Mozambique, then pick up salt in Aden and take it to Japan. On one trip we steamed more than 26,000 miles. It took us five months and three weeks at 10.5 knots — we were woefully underpowered." But the days of tramp steamers were numbered. MacMillan sold his fleet to Greek buyers and the young captain came ashore in 1949.

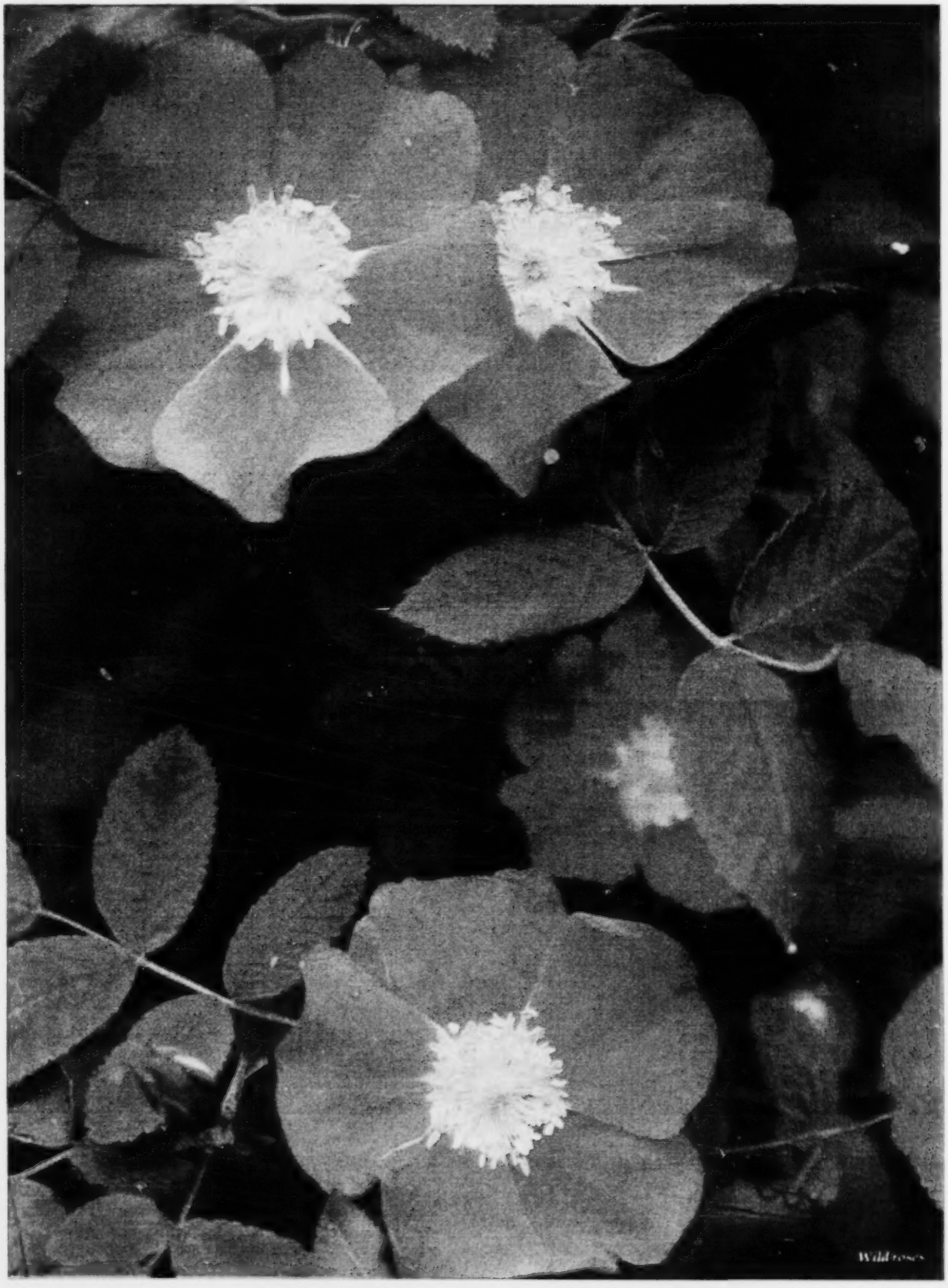
Hetherington applied to the MacMillan company for work, ready to start at the bottom, and was sent to Canadian White Pine to pull on the sawmill's green chain for three months. "Watching the old 'A' mill turn out 100-foot timber sticks was quite an experience." Hetherington moved to the log department shortly afterward. There he learned about towing, booming, and log supply; more, in fact, than he wanted to know. "The winter of '49 was bad. Logs froze together. I got used to seeing boom men running around with sticks of dynamite." By 1951 he had moved up to log department supervisor; by 1953 he was at head office as a log buyer. In that year the company had 275 boom men in 17 booming grounds. Together they sorted half a billion feet of logs every year, using skills now seen only at logging-sports shows. Hetherington was in a new profession, and launching into a quarter-century of floatplane travel.

"Jungle country" was the log buyers' name for the remote inlets they visited. Hetherington and other buyers of his time visited some 200 independent logging operations on the coast and in the Fraser Valley to buy logs. "There might be just two boom sections to look at, but the buyers would fly in, check the sorting, and make an offer on the spot. For a logger in difficulty, we'd arrange quick payment. It wasn't unusual for the company to make interest-free loans of up to $500,000 to keep a logger on his feet."

These years of experience have given Hetherington some skills peculiar to the business. In a 500-foot flypast he can peer out the plane's window and tell one log species from another with ease, coming up with a fair assessment of how well they're sorted. He can also make a good guess at their grade. "Telling pine from spruce is tough, though. And you can't grade logs from the air. Hemlock may look great from above, but it might have rotten heart-centres. Log grading is an elastic science, and the more I'm in it the less I know. We go by the source of the logs — who cut them, and where."

There are several major companies and a number of independent firms marketing logs in Vancouver. But Hetherington estimates that fewer than 200 people handle the wealth of logs sold and traded every year. Half a million dollars' worth may change hands on the strength of a conversation, and it may be weeks before the paperwork catches up. "The unwritten law of the local raw material market," says Hetherington, "is that you *always* live up to your verbal agreements."

Hetherington, who estimates his lifetime in the air at more than 4,000 hours, still spends a least ten hours per month chartering floatplanes to check the log supply. And after so many years at sea and in the air, he shows no signs of getting cold feet.

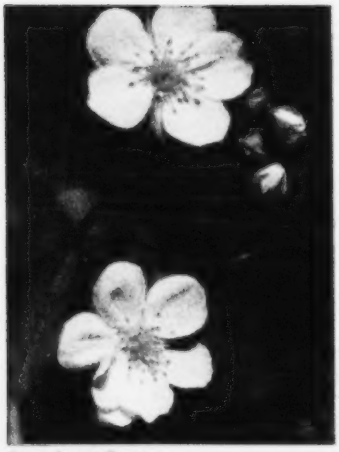


Wild roses

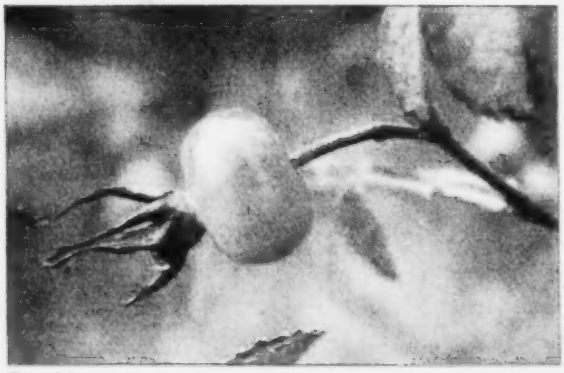
PHOTO I Sweeby

When last summer's issue of ForesTalk carried an article on the edible nature of some of B.C.'s wild berries, reader reaction was so positive that forest habitat specialist Enid Lemon responded by preparing a second chapter on forest edibles, this time featuring the wild rose family of B.C.

THE EDIBLE FOREST
ROSES



Strawberry flowers



Rose hip

Their petals range in colour from an almost pure white to a deep pink, but B.C.'s wild roses are more than just ornaments on the natural landscape. The 14 or so members of the *Rosaceae* family which grow in great abundance throughout B.C. provide a small but important part of the diet of various animals and birds. But they also can provide man with useful additions to his own daily diet, and there seems to be a use for just about every part of the plant.

Rose hips, the flower's fruit, contain more vitamin C than oranges and are also richer in iron, calcium and phosphorous. When oranges were unavailable in England and the Scandinavian countries during the Second World War, to take their place millions of pounds of rose hips were gathered and made into rose-hip syrup. This product is still in demand today. Dried and powdered hips are a popular addition to soups and hot and cold drinks. In Scandinavia, powdered rose hips are sprinkled over breakfast cereals.

To dry your own rose hips, cut off the stems and blossom-ends of the hips, cut the hips in half, then remove the centre core of seeds. (Although the seeds have a high concentration of vitamin E, they are covered with a mass of little hairs which can irritate the digestive system.) The hips, when dried at a low temperature in an oven, or spread out to air-dry on trays, can be crushed or made into powder and used for rose-hip tea. It takes one tablespoon of hips for each cup of boiling water. Syrup, jam, jelly and extract can all be made from rose hips, as well as delicious rose-hip butter.

As the hips remain on the bushes all winter, why not gather some shortly before Christmas, thread them on a thin string and use them as decorations for your tree? When it comes time to take down the tree, your hips will be dry and ready for use in tea.

Rose petals eaten right from the bush have a flavour similar to apples, but discard the green or white base — it's bitter. Rose petals can also be used for jams, jellies and tea. Tea can also be made from rose leaves and roots.

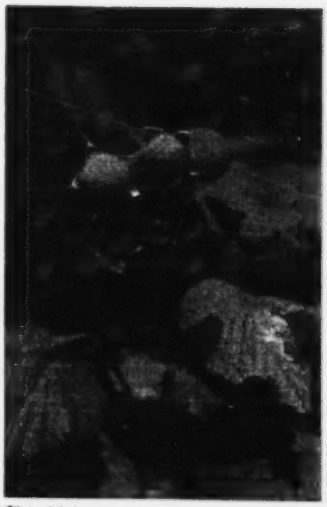
It may come as a surprise to many that the low-growing strawberry plant and the mountain ash, or Rowan tree (which can grow as tall as 50 feet), are both members of the rose family. The beautiful red mountain ash berries, like rose hips, are a good source of vitamin C. Because of their bitterness, however, they should not be cooked until they have been exposed to frost; then they make a very pleasant jam, jelly, pie filling or sweet wine. The Thompson and Haida Indians once ate the berries with fish or meat, but they did not consider the mountain ash to be as important dietarily as other members of the rose family.

The tasty fruit of the wild strawberry is very popular with birds, animals and humans, so competition for this delectable wild fruit is intense. Even though the fruit is small, picking it is more than worth the effort.

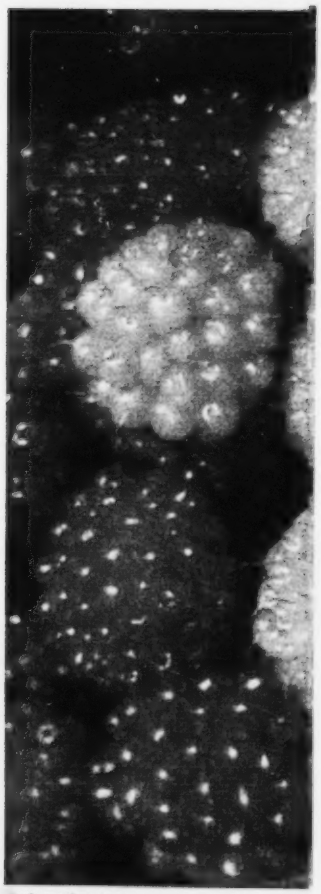
Wild strawberries apparently did not come under cultivation until the fourteenth century, and numerous domestic varieties have since been developed. Strawberries in the wild were enjoyed as far back as the ancient Greek and Roman civilizations, and were no less popular in seventeenth century England when Izaak Walton, author of *The Compleat Angler*, sang the praises of the plant: "Doubtless God could have made a better berry, but doubtless He never did."

Salmonberries (*Rubus spectabilis*) can be ruby-coloured as well as golden. It is generally thought that the name 'salmonberry' was inspired by the Pacific Northwest native Indian practice of eating these berries with partially dried salmon eggs. Salmonberries also were eaten on a biscuit of rough dough (perhaps the forerunner of our shortcake dishes).

'Saskatoon berry' (*Amelanchier alnifolia*) was the name given to another member of the rose family by the early settlers. It was a simplified form of the Cree name, *Mis-sask-quah-toomin*. The berry is also known as 'service berry', 'June berry' and 'shad bush'. Saskatoon berries have always been eaten by the native peoples of North America, being used for pemmican as well as cooked with various roots. Raw Saskatoon berries sometimes are not very tasty, since so much depends on habitat and weather conditions, but when cooked in a Saskatoon pie they are delicious.



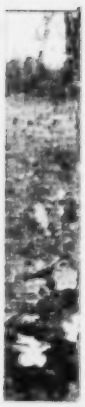
Thimbleberry



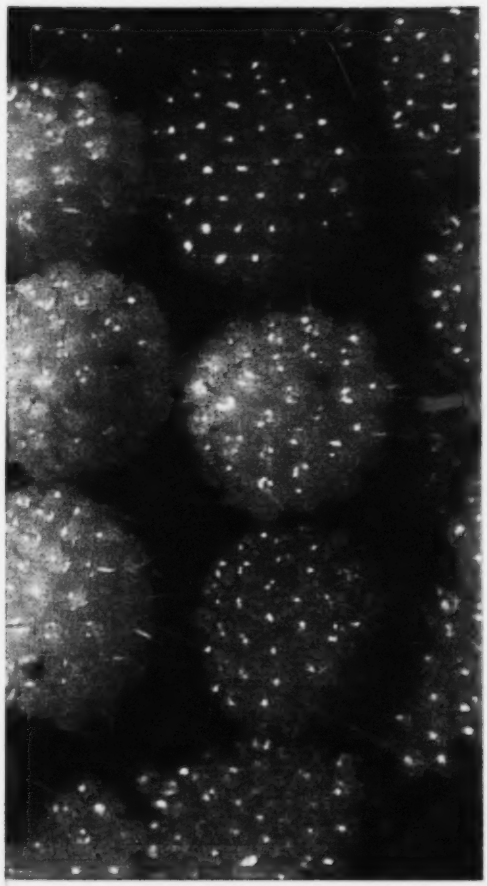
Salmonberries

Mountain ash berries

Saskatoon berry



Blackberries, a most abundant and widespread wild berry, account for most of the fruit collected in the wild. The trailing blackberry (*Rubus ursinus*), our native variety, has been joined by two others which have escaped from cultivation and now flourish in the wild — the Himalaya and the evergreen, or cut-leaf, blackberry. The trailing blackberry is found in many habitats: on rocky mountain slides, in the middle ranges of mountains, around stumps and brush on cut-over land, and along the edges of the forests. Although the plants grow in the shade as well as in the sun, they produce better berries in sunny locations. Evergreen and Himalaya blackberries are generally



Wild rose bush

associated with cultivated or waste ground. All three blackberry varieties make delicious jams and jellies, but unfortunately they are lacking in natural pectin. Just add a few green apples to supply this missing but very necessary ingredient for successful jam or jelly making.

The tender young, peeled sprouts of blackberries and blackcaps, or black raspberries (*Rubus leucodermis*), are also edible and pleasant to chew when you are walking through the forest.

The thimbleberry (*Rubus parviflorus*) is something of an oddity among the many members of the rose family; unlike those of its delicious relations, the berry of the plant is virtually flavourless. Its beautiful aspect is its very attractive pure white flowers. However, if thimbleberry sprouts are gathered in early spring, they are sweet and juicy when peeled and eaten raw. The Nootka Indians dried thimbleberries in large quantities. They also made a special type of berry and clam cake. A layer of roasted clams were laid out on a board. This was covered with fresh thimbleberries, then another layer of clams was added, and so on. A board and weights were placed on top of the mixture to press it together into a kind of loaf which was then dried and stored for winter use.

While some may feel that a rose has no value other than to be admired, the 14 or more varieties of wild roses found in B.C. are also very good to eat.

Kitchen Hints for Edible Roses

Rose-Hip Butter

Snip off the ends of the dried rose hips and boil 4 cups of hips in 2½ cups of water until the hips turn soft. Press them through a sieve into a heavy pot. Add cinnamon, cloves and other spices to taste. To sweeten, add about one-half as much sugar as there is rose-hip pulp or one-quarter as much honey. Simmer until thick, stirring to prevent sticking.

(The seeds which were removed from the outer shell should not be thrown away. They can be ground, boiled in a small amount of water and strained through a cloth, with the remaining vitamin-rich liquid used in place of water in the making of jams and syrups.)

Strawberry Delight

Beat two egg whites until stiff, and fold in ½ cup of fruit sugar. Whip ½ cup of heavy cream. Combine egg whites, cream, one cup of mashed strawberries and ¼ cup brandy, Cointreau or mead. Sprinkle with whole berries and serve immediately.

Saskatoon Pie

Make enough pastry for two pie crusts. Pick, wash and drain 4 cups of Saskatoon berries. Fill the pastry-covered pie plate with the berries and sprinkle with ½ cup sugar, ¼ cup sifted flour, and 1 teaspoonful of salt. Dot with butter and a squeeze of lemon juice. Cover with the top crust, perforate with a fork, and pop into a 400°F. oven for 45 minutes.

Blackberry and Black Raspberry Tea

Gather the young leaves of the plants once the dew is off them. Take care not to collect any wilted leaves. Place a handful of fresh or dried leaves into a warmed teapot and pour in boiling water. You can also throw in some of the shoots and twigs from the blackberry or raspberry plants. If you wish, you can add a few fresh or dried berries to the tea while it is steeping to add flavour and colour.

Every year

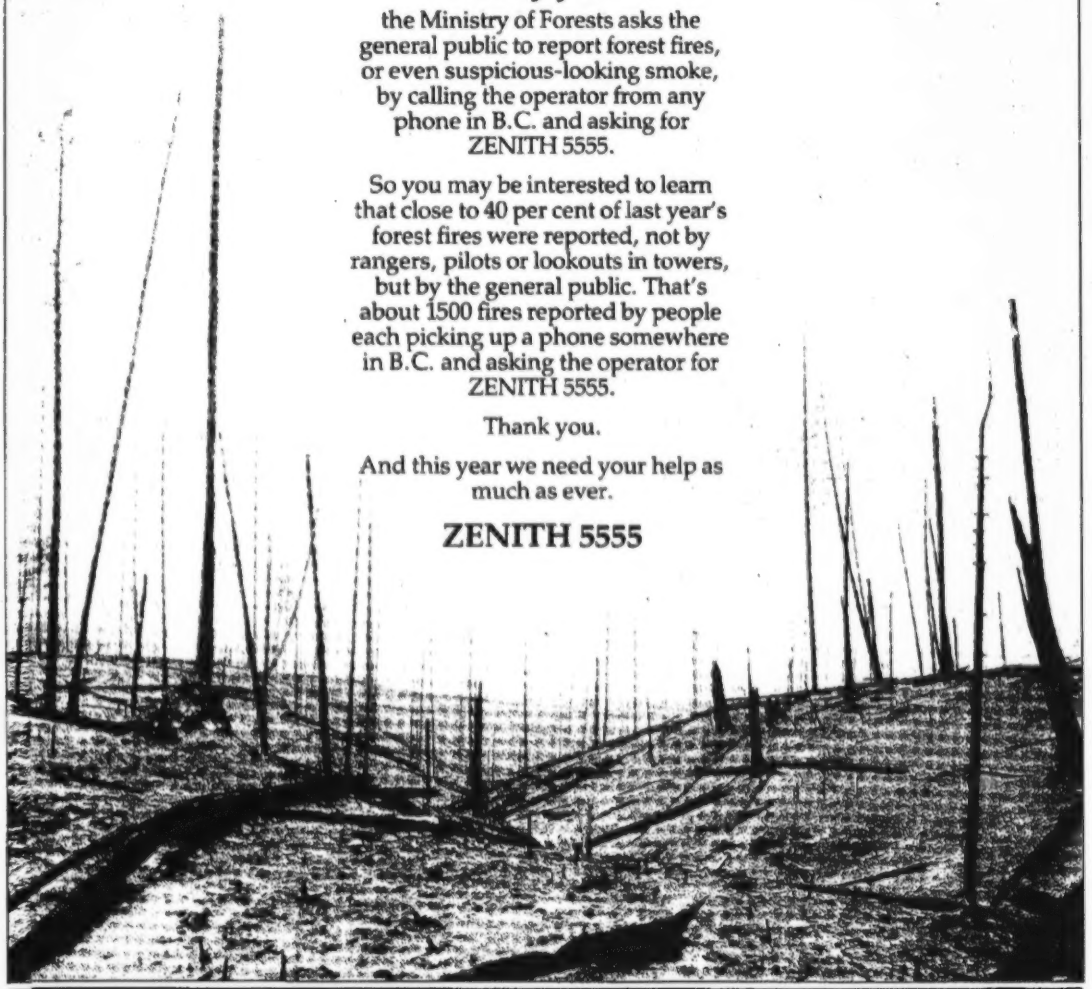
the Ministry of Forests asks the general public to report forest fires, or even suspicious-looking smoke, by calling the operator from any phone in B.C. and asking for ZENITH 5555.

So you may be interested to learn that close to 40 per cent of last year's forest fires were reported, not by rangers, pilots or lookouts in towers, but by the general public. That's about 1500 fires reported by people each picking up a phone somewhere in B.C. and asking the operator for ZENITH 5555.

Thank you.

And this year we need your help as much as ever.

ZENITH 5555



Province of British Columbia
Ministry of Forests
HONOURABLE TOM WATERLAND, MINISTER

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